



***AIRSPACE MODERNISATION AIRSPACE CHANGE
PROPOSAL***

STEP 2A APPENDIX F – STAGE 2 FORUM UPDATES

April 2022 - July 2023





Table of Contents

1. NACF April 2022 presentation	3
2. HSPG query	9
3. NACF July 2022 presentations (2)	11
4. HSPG July 2022 notes.....	29
5. Joint Steering Board October 2022 Presentation	32
6. HSPG feedback.....	38
7. FLOPSC October 2022 presentation	42
8. NACF November 2022 presentation	49
9. HSPG December 2022 notes.....	51
10. HSPG February 2023 presentation	54
11. FLOPSC February 2023 presentation	60
12. NACF February 2023 presentation	65
13. FLOPSC May 2023 presentation	70
14. HSPG May 2023 presentation.....	74
15. NACF May 2023 presentation.....	79
16. HSPG July 2023 presentation.....	84
17. NACF July 2023 presentation.....	86

The material in this document is shown in chronological order.

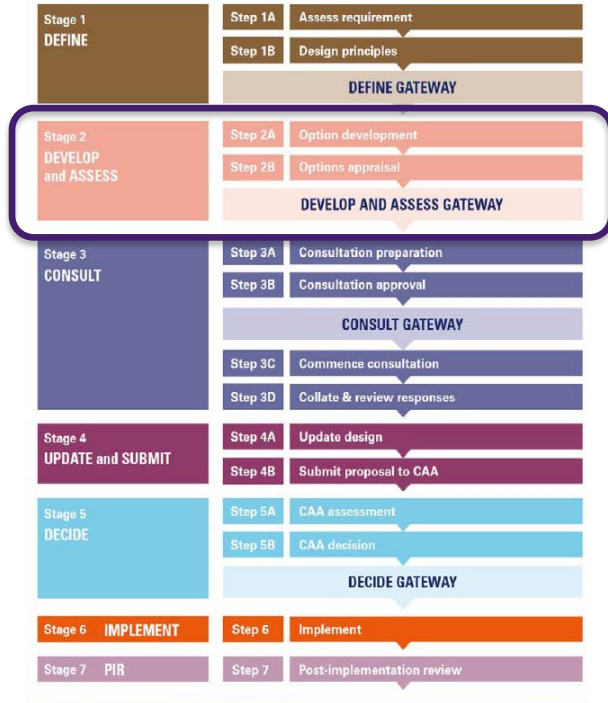
All airspace design options in this document are subject to change throughout the airspace change process, as options are matured in detail and refined in accordance with safety requirements, design principles, appraisals and stakeholder engagement and consultation.



Airspace Modernisation Programme: Update

27 April 2022

The CAA passed us at the Stage 1 Gateway in February: we are now beginning Stage 2 of the ACP process

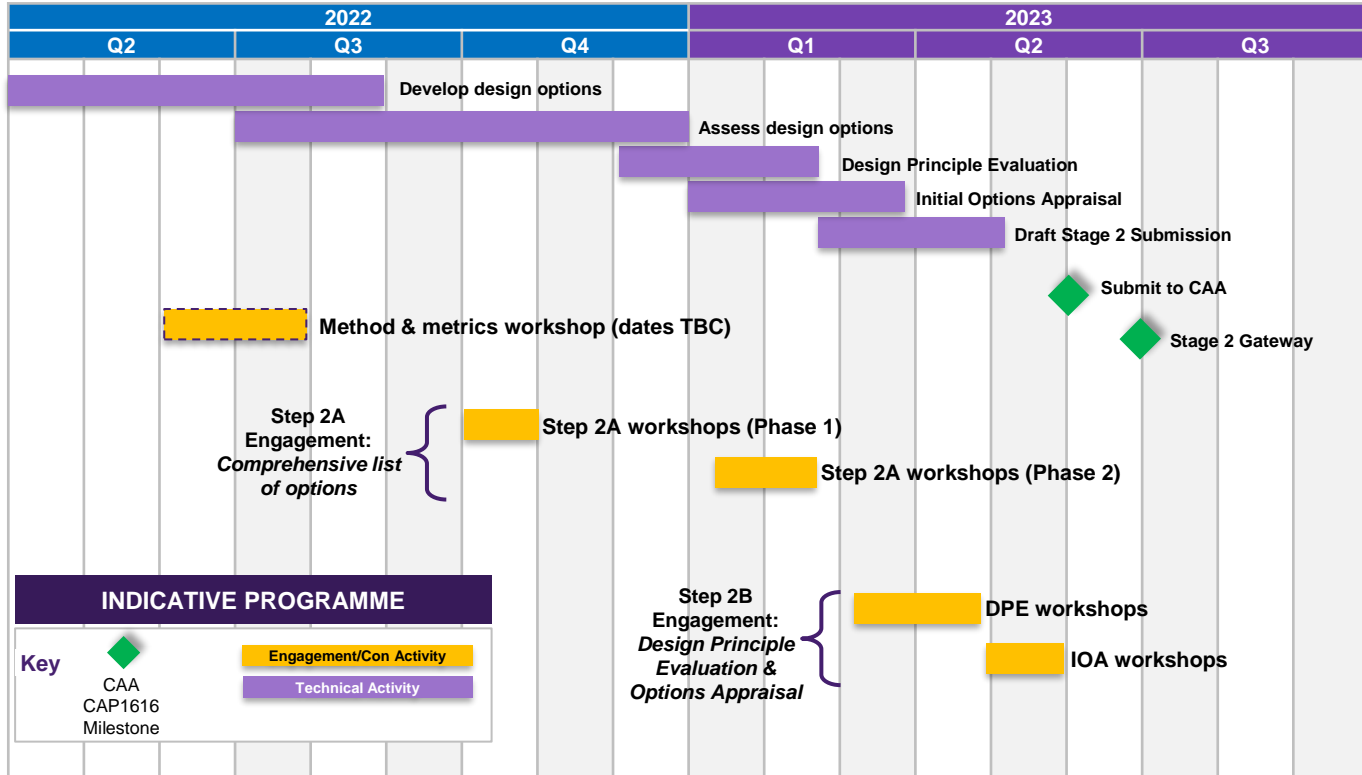


- Stage 2 is known as “Develop and Assess”
- We begin this stage by developing future airspace design options and taking these options through an assessment of likely impacts
- We start with a long list of potential options, and shortlist these based on the assessment/appraisal results
- We will engage HCNF members throughout Stage 2
- We expect to complete Stage 2 in June 2023

We remain on target for implementation of the airspace change in 2027-30

CAP1616	2021	2022	2023	2024	2025	2026	2027	2028	2029
Stage 1 Define	Green	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
Stage 2 Develop & Assess	Grey	Green	Green	Grey	Grey	Grey	Grey	Grey	Grey
Stage 3 Consult	Grey	Grey	Grey	Green	Green	Grey	Grey	Grey	Grey
Stage 4 Update & Submit	Grey	Grey	Grey	Grey	Grey	Green	Green	Grey	Grey
Stage 5 CAA Decide	Grey	Grey	Grey	Grey	Grey	Grey	Green	Grey	Grey
Stage 6 Implement	Grey	Grey	Grey	Grey	Grey	Grey	Yellow	Yellow	Yellow

We have developed a plan for regular stakeholder engagement throughout Stage 2



- **DPE:** The Design Principle Evaluation sets out how the design options have responded to the design principles
- **IOA:** The Initial Options Appraisal compares the design options, using metrics set out in CAP1616 and in WebTAG.

There are four engagement activities planned over Stage 2, in addition to regular HCNF updates

1. **Methods and Metrics Engagement:** Workshop(s) where we explain our proposed methodology for Stage 2. This will include a discussion on the metrics we will use to present our findings, and an opportunity for attendees to share their views.
2. **Comprehensive List of Options Engagement:** *Statutory* engagement required by CAP1616. Workshops will be held with the same stakeholders we engaged on design principles.
3. **Design Principle Evaluation:** Workshops where we share the outputs from our Design Principle Evaluation so that stakeholders can see how the options performed against the design principles that you helped develop. We will explain the work undertaken, the methods of analysis used and the results.
4. **Initial Options Appraisal:** We will share the key findings of the Initial Options Appraisal with stakeholders (at HCNF and/or other workshops as required).

Heathrow

RE: Update on Heathrow's Airspace Modernisation Proposal

[REDACTED]

Mon 25/04/2022 11:23

To: DD - Airspace <airspace@heathrow.com>

Cc: [REDACTED]

Some people who received this message don't often get email from [REDACTED]

[Learn why this is important](#)

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Dear [REDACTED] et al

As I expect you know, HSPG have been asked to transfer our hosting arrangements from Slough to Hounslow – [REDACTED] through April and May, hopefully getting back to normal in June. I have only a little bit of time I can put to airspace before June if required.

Can you remind me, when do you envisage Stage 2 will start to need some input from us?

KR

[REDACTED]

[REDACTED]

Lead Advisor
Heathrow Strategic Planning Group

[REDACTED]

RE: Update on Heathrow's Airspace Modernisation Proposal

DD - Airspace <airspace@heathrow.com>

Thu 28/04/2022 13:56

To: [REDACTED]

Cc: [REDACTED]

📎 1 attachments (299 KB)

HCNF_Airspace_Modernisation_Programme_Update_20220427.pdf;

Hi [REDACTED]

I hope the transition is going well.

We presented an update on the Airspace Modernisation programme to the HCNF yesterday. I have attached the slides we shared there. You will see that our current plan for stakeholder engagement involves four activities, beginning in June/July this year and ending in June/July next year when we submit our Stage 2 material to the CAA.

The first of the engagement activities is a "Methods and Metrics workshop" where we will summarise the methodology we are following to assess design options at Stage 2 and open up a discussion on the metrics we will use to show the results of this work. We expect it to be quite a technical discussion so we don't expect all our community representatives to attend, but it would be useful if you were able to be there. I will ensure an invite is sent to you when we have finalised the date for the workshop.

I asked [REDACTED] our HCNF Coordinator, to add you to the HCNF distribution list after we last met. Can you confirm whether you received the slides from yesterday's forum? (sent at 11:09am today). I will follow up with [REDACTED] if not.

Kind regards,

[REDACTED]

From: [REDACTED]

Sent: 25 April 2022 12:23

To: DD - Airspace <airspace@heathrow.com>

Cc: [REDACTED]

Subject: RE: Update on Heathrow's Airspace Modernisation Proposal

Some people who received this message don't often get email from [REDACTED]

[Learn why this is important](#)

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Dear [REDACTED] et al

As I expect you know, HSPG have been asked to transfer our hosting arrangements from Slough to Hounslow – [REDACTED] through April and May, hopefully getting back to normal in June. I have only a little bit of time I can put to airspace before June if required.

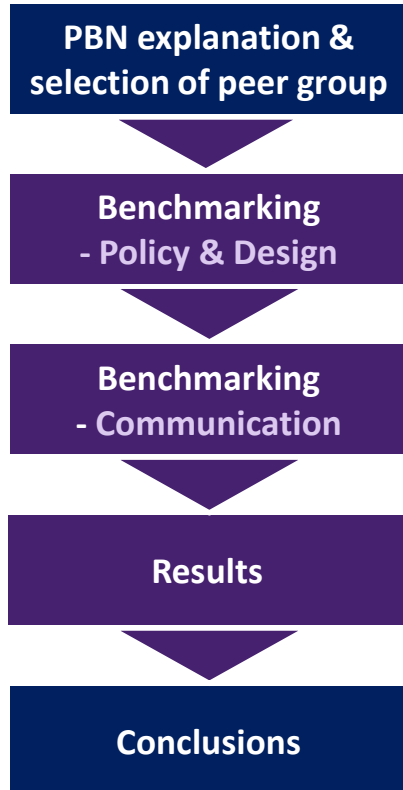


Lessons Learned: Response to Taylor Airey's PBN Implementation Benchmarking Report

July 2022

Heathrow₁₁

Taylor Airey was tasked with undertaking a review of global PBN implementation to assist us in identifying best practice



- The aim of the study was to:
 - Develop a common understanding of PBN and its implications for airspace design
 - Understand PBN implementation from policy development to impact assessment using comparator airports that:
 - Are implementing PBN and are comparable in size to Heathrow; and
 - Have attracted high level of protests or have public data available.
 - Consider approaches to airspace change stakeholder engagement
 - Benchmark results to demonstrate good and bad practice
 - Identify key findings and recommendations for future PBN implementation
- The study was undertaken from July 2019 to March 2020, informed through:
 - Stakeholder engagement with members of the Heathrow Community Noise Forum (HCNF),
 - The Heathrow Noise Action Plan 2019 – 2023, and
 - A desk-based benchmarking exercise using case studies from airports across the world that have implemented PBN.

We are generally supportive of the recommendations identified by Taylor Airey

Taylor Airey Recommendation	Heathrow Response
Recommends “more meaningful” metrics to assess noise impact	We are aware that some community stakeholders are uncomfortable with the metrics required by WebTAG/CAP1616. We are therefore investigating the use of additional metrics where appropriate, to provide greater transparency and confidence around our design assessments.
Recommends that flight paths are identified and consulted on as early as possible	CAP1616 process does not allow for early identification of flight paths, but does allow for detailed and lengthy consultation once flight path options are available. We are planning to engage stakeholders throughout the development of airspace design options.
Recommends that consultation and engagement are targeted at affected communities	We are planning awareness/advertising campaigns and seeking to target community representatives from all potentially affected areas, including areas not overflown (or engaged) today

The report also sets out recommendations for CAA and UK Government

Taylor Airey Recommendation	Heathrow Response
<p>Recommends tighter Government Policy around:</p> <ul style="list-style-type: none">a) Preference for concentration/dispersion of flight pathsb) Measurement of health impacts	<ul style="list-style-type: none">a) Current situation allows airports to take account of individual circumstances (geography, need for the change, Design Principles): Government Policy should not be too prescriptiveb) Would support further clarity/guidance on the measurement of health impacts due to aircraft noise. We recognise the need for further research in this area.
<p>Recommends greater clarity around governance of the airspace change process</p>	<p>We would support greater guidance on how airports should collaborate on evolving designs and public consultation.</p>
<p>Recommends challenge to aircraft FMS* limitations, to allow for multiple PBN routes to be programmed</p>	<p>We are also working with airlines to understand more about FMS limitations so that we can consider this in our future airspace design.</p>

* Flight Management System

The Taylor Airey report has assisted us in identifying the most applicable lessons for Heathrow

- The benchmarking exercise ranked “best” performers and “worst” performers and placed Heathrow in the middle of the group, based on evidence of Heathrow’s approach to airspace change to date
- **This report expands on our earlier response to the Taylor Airey analysis**
- The case studies most comparable to Heathrow are generally large airports located in major urban areas and located near to other large/medium airports where airspace is constrained
- **Lessons learned will inform Heathrow’s plans for engagement and consultation throughout the Airspace Modernisation ACP**

“London City Airport generated extensive criticism for a relatively low level of engagement around flight path changes”

Taylor Airey Report Findings

- London City Airport introduced PBN flight paths in 2014/15
- *Consultation was mainly conducted through the airport’s consultative committee without public meetings, advertised community events, or engagement with local authorities; similarly no written communications were targeted at the affected areas*
- *London City forecast a significant decrease in the numbers of people overflowed. However, they underestimated the strength of feeling against the concentration of traffic... the majority of noise complaints were generated by individuals directly under the route centrelines*
- ***Resulted in a deterioration of trust between the airport and the local community, generating the formation of opposition groups opposed not only to the flight path changes but also to airport expansion***

Lessons learned for Heathrow:

- **Engage with Local Authorities throughout the ACP**
- **Use public meetings and consultation events to share information and collect views**
- **Widespread advertising of public consultation and consultation events**
- **Use the CAP1498 method to assess impact of increased overflight on those already overflowed**

“At Sydney Airport extensive consultation and investment in community relations has taken place over a number of years”

Taylor Airey Report Findings

- **Sydney Airport Community Forum** monitors the operational restrictions imposed on Sydney Airport, acting as a powerful focal point for the local community, government & regulator to shape environmental and noise operating restrictions
- Communication materials around the impact of noise are well presented using intuitive and engaging techniques including animations and videos
- The airport’s noise website offers a tailored experience for local communities
- Formal communication channels are well developed, with the impact of overflight from the airport being reported in local land searches

Lessons learned for Heathrow:

- **Consider community diversity when developing consultation material, for example:**
 - Age
 - Education
 - Language
 - Cultural background
 - Mobility
- **Directly reach out to those most impacted by the change**

Phoenix Airport made “significant changes without properly notifying the public or allowing the public to provide input”

Taylor Airey Report Findings

- *Routes condensed and lowered flight corridors over homes, historic districts, natural preserves and parks*
- *Following a court ruling, the FAA agreed to reach out to residents while temporarily resuming the previous departure routes.*
- *FAA will develop satellite-based procedures for the original routes, seeking community feedback throughout the process*

Lessons learned for Heathrow:

- **Share forecast impacts of airspace change through public consultation prior to implementation of changes**
- **Ensure baseline data is accurate prior to assessing impacts**
- **Engage local authorities and political stakeholders throughout the airspace change process**

“Vienna airport is often cited as best practice in terms of open, fair and transparent stakeholder engagement”

Taylor Airey Report Findings

Extensive community engagement through local dialogue forums has provided a useful platform from which consultations on specific route options can be developed with the local community

PBN was implemented in line with existing operating restrictions including:

- *A preferential runway system*
- *A ban on weekend night flights*
- *A cap on aircraft movements along given arrival and departure routes over a set period of time*

Lessons learned for Heathrow:

- **Ongoing engagement through community forums can help to:**
 - **Build relationships**
 - **Test approach to developing route options**
 - **Test approach to public consultation**
- **Clear operating restrictions and procedures can help to give local communities confidence on the impacts of new flight paths**

“Auckland Airport provided clear communications, incremental implementation and a responsive design process”

Taylor Airey Report Findings

- *Active listening during a consultation / trial period, and the ability to alter the location of PBN routes in response to feedback*
- *Online resources explain current and future operations using clear and accessible published material and easy to navigate websites*
- *Clear guidelines... from government around the airspace change process and the implementation of PBN*
- *Regular updates keep stakeholders informed and engaged using a well defined reporting process and understandable status updates*

Lessons learned for Heathrow:

- **Develop a flexible design process that allows stakeholder feedback to be incorporated**
- **Ensure online resources are accessible and up-to-date**
- **Provide regular stakeholder updates**

Heathrow can also learn lessons from industry's best practice engagement guidance for PBN implementation

- Develop a stakeholder engagement plan tailored to the scope and scale of the project to engage stakeholders **early**, adopting a consistent approach from design phase through to post implementation
- Include both communities that are **already adversely impacted** by the operation **and** those that are **potentially impacted** by the change
- **Tailor information** provided to communities to ensure that it is targeted and location specific
- Be **open and transparent** about both benefits and adverse effects of proposed changes (e.g. noise contour maps, flight track depictions, emission levels)
- Provide communities with **a variety of educational materials**, e.g. social media, print, broadcast media, creative engagement technology
- **Build relationships** with stakeholders to address concerns of trust, fairness, health effects and quality of life
- Provide **clear traceability** between stakeholder feedback and its influence and impact on options
- **Manage different expectations in a transparent way** given it is unlikely any outcome will meet the demands of all parties

Recommendations on best practice have helped us validate Heathrow's approach to community engagement

For the Airspace Modernisation ACP, Heathrow is committed to the following:

<p>Robust analytical approaches to forecasting impacts prior to consultation and proactively seeking to engage those likely to be overflowed</p>	<p>✓ Assessment of impacts at Stage 2 and Stage 3</p>
<p>Transparency and engagement with local authorities throughout the ACP around inevitable changes to the spread/dispersion of noise due to the introduction of PBN flight paths</p>	<p>✓ Engagement with Local Authorities scheduled from Stage 1 to Implementation</p>
<p>Offering stakeholders visibility of proposed changes and impacts, through user-friendly resources, providing ample opportunity for review and feedback</p>	<p>✓ Awareness campaign Focus groups Large stakeholder list Public Consultation (Stage 3)</p>
<p>Widespread advertising of public consultation events to attract a broad range of stakeholders from a wide range of backgrounds</p>	<p>✓ Stage 3 Consultation Plan</p>
<p>Post public consultation, outline all feedback received and how it has been considered in the final airspace design in a Consultation Feedback Report</p>	<p>✓ Stage 3 Consultation Plan</p>

Heathrow



Methods and Metrics Workshop: Summary

July 2022

On Tuesday 5 July, Heathrow hosted a technical airspace workshop

Purpose of the workshop:

- Heathrow shared our proposed methodology for developing, and assessing, a comprehensive list of options
- Heathrow shared the metrics we intend to use to evaluate options against the design principles
- Stakeholders shared their views on Heathrow's proposed metrics



Attendees:

- Heathrow's airspace and environmental experts
- Independent facilitators from Headland Consultancy
- 8 Community Group representatives
- 2 Local Authority representatives
- 1 Environmental Group representative

Discussion centred around the approach Heathrow will take to developing and assessing options

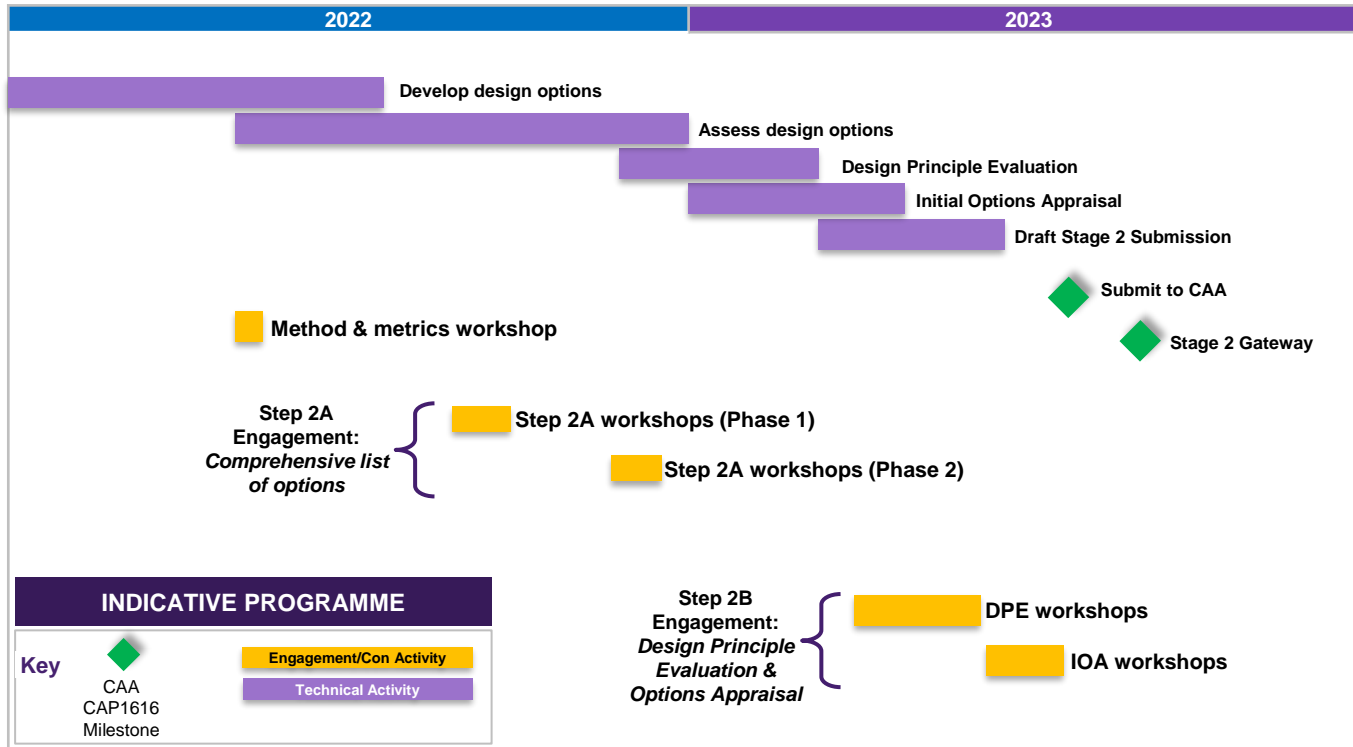
Key topics included:

- Heathrow's approach to generating data to inform a Comprehensive List of Options for engagement later this year
- Re-cap of the design principles
- Proposed metrics for evaluating route options against each of the design principles

Next Steps:

- An independent meeting note will be produced by Headland. It will be shared with all workshop attendees first for review and comment, and then with all NACF members.
- Heathrow's response to meeting outcomes

Further stakeholder engagement activities are planned throughout Stage 2 of our ACP



- **DPE:** The Design Principle Evaluation sets out how the design options have responded to the design principles
- **IOA:** The Initial Options Appraisal compares the design options, using metrics set out in CAP1616 and in WebTAG.

Heathrow

HSPG Environment and Airspace Group - Tues 19th July 2022

Notes of meeting

██████████ – Chair – Hounslow, ██████████ – Slough (Chair part), ██████████ (convenor) – Secretariat, ██████████ – WLA, ██████████ - Surrey, ██████████ - Spelthorne, ██████████ - Runnymede, ██████████ – Buckinghamshire, ██████████ – Climate Change Spelthorne, ██████████ Sustainability Spelthorne, ██████████ – Climate Change Runnymede, ██████████ – Elmbridge, ██████████ – Hounslow, ██████████ – RBWM, ██████████ – Secretariat,

██████████ – HAL

1. Welcome

██████████ chairing

2. Notes of last meeting

Agreed

3. Heathrow ACP

██████████ ran through programme overview to statutory consultation in 2024/25 and submission in 2027. Just completed a Methods and Metrics consultation – any further comments welcome. Next - Step 2A Workshop in Sept / Oct on the long list of potential track options. Then sharing the results of evaluation in the new year.

Q – What’s changed since planning the ACP for 3R?

A – Carbon is up the agenda

Have built a local factors database, 1000s of entries.... Seeking information from LPAs on Local Plans for population change etc

Q - When to consider interaction with other airports too? How, when?

A - Cumulative impacts – start considering at Stage 2 – addressed at Stage 3.

Engagement so far showing there are big concerns around concentration Vs dispersal enabled with PBN; also that Night flight routes to be treated distinctly to day time routes etc.

Noted that ILS approaches necessary at times of peak activity, more scope for varied IPA and off-ILS approaches when the airport is quieter / off-peak

HAL are following the Govt Policy in terms of definitions and systems. e.g. Priority given to noise reduction over carbon reduction for operations below 7000ft unless there is a ‘disproportionate’ impact.

Team generating 650,000 potential flight tracks, data collected for each on what overflow, vulnerabilities – this data will inform design

Key points in discussion:

- HSPG position has long been that noise is first priority at lower heights

- We can seek to impress on new National policy including the new National Development Management Policies which may be highly relevant (such as a replacement to PPG24 Planning and Noise)
- The meaning of 'disproportionate' – this needs a focussed and airport specific effort, addressing the true proportion of carbon in local part of route only Versus the noise impact. To provide an informed assessment of what is 'disproportionate at Heathrow'. ■■■ **to take this point back to team**
- It is not too late to contribute points to the data for collection / analysis
- Question asked whether HAL are counting for number of people for who noise reduces through ACP? ■■■ **to take this back**
- All flight tracks to be modelled using a A320 for comparison – members support case for other aircraft types to be used too for assessing night (23.00-07.00) operations in particular – a predominance of long haul / heavier aircraft in the small hours and large and some older types for cargo operations (often at night and 'quieter' periods of activity – ■■■ **to take back**
- Q – the realism of assuming all future routes to the existing ground navigation beacons such as at Dover – Is this representational of the future use? Is there scope and benefit to add variation? ■■■ **to take back**
- Cumulative impacts need assessing – overall impacts on London and surroundings of flights from all airports
- Overall economic impact at Heathrow of Night Flights should be assessed to be compared to impacts of Heathrow Night Flights – what work are Heathrow to do on assessing this?
Request response from HAL
- HAL working assumption that 'meaningful respite' occurs at min. 9dB reduction in noise – agree
- SONA review is important – agree

Additional points after ■■■ left the meeting

- The Group found the session informative and constructive, HSPG to request a further session with Airspace team / HSPG as part of the next stage of engagement in Sept/Oct -2A long list of route options
- The importance of new SONA and other work to look at *awakenings* – causes, impacts, thresholds etc
- Based on the presented material, concern expressed that it appears that Air Quality impacts is only to be assessed in qualitative and not quantitative terms (previous discussion around the harm caused by ultra-fine particles)

ACTION: ■■■ to prepare draft response to HAL

4. LAEP

The LAEP brief agreed and now at the procurement stage. Appointment due in Sept. Complete Stage 1 by Jan 23. The Phase 2 details to follow

Series of bi-laterals including HSPG/HAL to take place shortly.

Datacentres

Trans-Atlantic transmission cable routes broadly along the A4, datacentres seek location within around 15km for best access – hence extreme pressure. Providers are doing deals to secure premises and reserve future available electrical power capacity. Consequently, other types of use are physically squeezed / out-bid and other development cannot advance purchase power supply in this way and constrained:

- Large social housing scheme in Ealing delayed – no power available until 2033. WLA in discussion with GLA and DNOs
- Slough – Zebra Bus Fund – 15mths ago, First Buses depot beside bus station – insufficient power supply available to develop a base for battery-electric buses. Meanwhile, large number of datacentres opened and planned locally. Slough – now has x26 datacentres. The Simplified Planning Zone on the Trading Estate made it difficult to halt conversion of warehouses to datacentres, elsewhere Slough now treat as SG rather than B8 and require approval. Looking to refuse.
- Spelthorne – issue with the power generators which are used in series – the catalytic converters use ammonia in particle capture, this then removed by road. Also, heat generation, low yield in jobs, ugly, AQMA concerns

6. Work plan timeline

Discuss proposal at next meeting, **ACTION:** [REDACTED]

Next meeting could include: focus on ACP, SONA update, decarbonisation piece, possibly Insetting?

Look to engage with Noise Forum and others



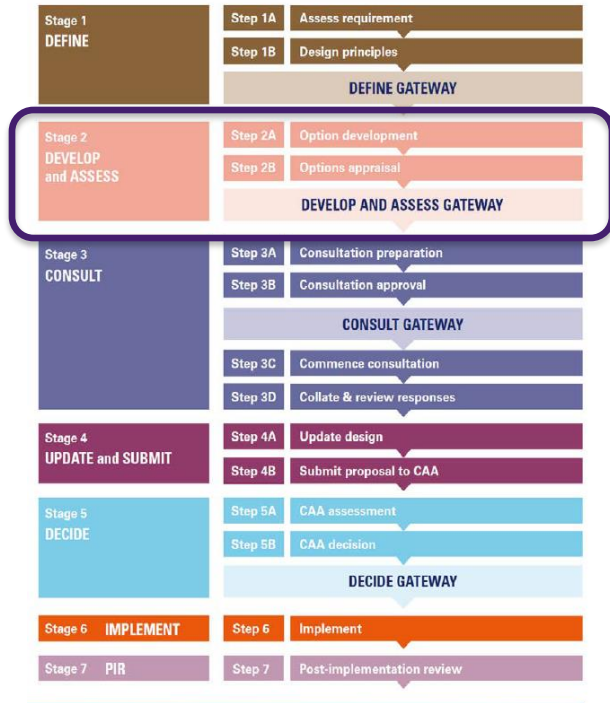
Airspace Modernisation Programme

5th October 2022

Heathrow Airspace Modernisation Airspace Change Proposal

- Heathrow is modernising airspace in accordance with the wider UK Airspace Modernisation Strategy ([CAP1711](#)). The aims of the strategy are:
 - maintaining and enhancing high aviation safety standards
 - securing the efficient use of airspace and enabling integration
 - avoiding flight delays by better managing the airspace network
 - improving environmental performance by reducing emissions and by better managing noise
 - facilitating defence and security objectives.
- Heathrow commenced an Airspace Change Proposal (ACP) in April 2021. Details are available on the [CAA Portal](#).
- Airspace change is a 7 Stage process and Heathrow completed Stage 1 (Define) in February 2022.

We are now in Stage 2 of the ACP process



- Stage 2 is known as “Develop and Assess”
- We begin this stage (2A) by developing future airspace design options and taking these options through an assessment of likely impacts
- We start with a long list of potential options, and shortlist these based on the assessment/appraisal results
- We will engage with stakeholders throughout Stage 2 including the statutory requirement to share our Comprehensive List of Options in early November
- We expect to complete Stage 2 in September 2023

Indicative Timeline

CAP1616	2021	2022	2023	2024	2025	2026	2027	2028	2029
Stage 1 Define	Green	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
Stage 2 Develop & Assess	Grey	Green WE ARE HERE	Green	Grey	Grey	Grey	Grey	Grey	Grey
Stage 3 Consult	Grey	Grey	Grey	Green	Green	Grey	Grey	Grey	Grey
Stage 4 Update & Submit	Grey	Grey	Grey	Grey	Grey	Green	Green	Grey	Grey
Stage 5 CAA Decide	Grey	Grey	Grey	Grey	Grey	Grey	Green	Grey	Grey
Stage 6 Implement	Grey	Grey	Grey	Grey	Grey	Grey	Yellow	Yellow	Yellow

Our current engagement activity.

1. **Comprehensive List of Options Engagement:** *Statutory* engagement required by CAP1616.
 - 1-15 November: 5 Community Workshops and 5 Industry Workshops
 - If you would like to be included in this engagement activity, please email airspace@heathrow.com by 19th October 2022
2. Further engagement activities will take place in Q1 & Q2 of 2023.

Note – A full public consultation will take place during Stage 3 of the process – estimated c. 2025

Heathrow

From: [REDACTED]
Sent: 10 October 2022 12:13
To: [REDACTED]
Cc: [REDACTED] DD - Airspace
Subject: RE: Notes of meeting - comments from HSPG
Attachments: HSPG confirming key points Heathrow ACP methods and metrics.docx

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Hi [REDACTED]

Please see attached note confirming HPSG comments on the last stage consultation – you attended our meeting. Any queries do call

Do you wish / can you attend the next one on Weds – I sent you an Agenda.

KR

[REDACTED]

[REDACTED]

Note to confirm the key points following HAL/HSPG session of 17 July 22 - Heathrow ACP Methods and Metrics

1. The HSPG position has long been that noise is first priority at lower heights / altitudes
2. Recognising existing national policies and guidance needs to be applied as a minimum standard, we can also should also seek to impress on new National policy including any the new National Development Management Policies which may be highly relevant (such as a replacement to the former PPG24 Planning and Noise)
3. In balancing carbon and noise impacts, the meaning of 'disproportionate' – this needs a focussed and airport specific assessment, addressing the true proportion of carbon in local part of route only Versus the noise impact locally. i.e. To provide an informed assessment of what is 'disproportionate for Heathrow operations'.
4. It is not too late to contribute points to the data for collection / analysis for model building –HAL to provide information about the data collection from LAs that is in hand. HSPG willing to assist.
5. Question asked whether HAL are counting for number of people for who noise reduces through ACP?
6. HAL conformed that all flight tracks to be modelled using a A320 for comparison purposes – members support case for other aircraft types to be used too for assessing night (23.00-07.00) operations in particular – a predominance of long haul / heavier aircraft in the small hours and large and some older types for cargo operations (often at night and 'quieter' periods of activity)
7. The realism of assuming all future routes using the key existing ground navigation beacons such as at Dover was queried? Is this representational of the future use? Is there scope and benefit to add variation to these?
8. At later stages the cumulative impacts of noise of different airports on populations needs assessing – the combined and cumulative impacts on London and surroundings populations of flights from all L&SE airports. Please clarify, in resolving design interactions between various airport's ACPs, will reduction of cumulative and combined noise impacts of noise be the priority across all flight path design and interactions across the London TMA, for operations below 4000ft? and 7000ft? e.g. overall noise reduction may increase the route distance/carbon for a particular flight path. Request response?
9. The overall economic impact at *Heathrow* of Night Flights should be assessed to be compared to impacts of *Heathrow* Night Flights – what work are Heathrow to do on assessing this? Request response from HAL
10. HAL working assumption that 'meaningful respite' occurs at min. 9dB reduction in noise – agree
11. SONA review is important, HSPG willingness to engage – **agree**
12. The Group found the session informative and constructive, HSPG to request a further session with Airspace team / HSPG as part of the next stage of engagement in Sept/Oct -2A long list of route options
13. Agree importance of new SONA and other work to look at *awakenings* – causes, impacts, thresholds etc
14. Based on the presented material, HSPG concerned that it appears that Air Quality impacts is only to be assessed in qualitative and not quantitative terms (previous discussion around the harm caused by ultra-fine particles)

Oct 2022

From: [REDACTED]
Sent: 12 October 2022 09:41
To: [REDACTED]
Cc: DD - Airspace
Subject: RE: HSPG Meeting tomorrow

Thanks [REDACTED]. I will put it in the diary now.

Best regards,
[REDACTED]

From: [REDACTED]
Sent: 12 October 2022 09:22
To: [REDACTED]
Cc: DD - Airspace <airspace@heathrow.com>
Subject: RE: HSPG Meeting tomorrow

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Great – next meeting set for AM of 7th Dec – we can do it all justice then

[REDACTED]

From: [REDACTED]
Sent: 12 October 2022 08:37
To: [REDACTED]
Cc: DD - Airspace <airspace@heathrow.com>
Subject: RE: HSPG Meeting tomorrow

Yes sounds good – thanks [REDACTED]

Please do let me know if there is anyone in the HSPG meeting who hasn't received a workshop invite and would like one.

Many thanks,

From: [REDACTED]
Sent: 11 October 2022 21:28
To: [REDACTED]
Subject: Re: Meeting tomorrow

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Yes that's fine, we can do it that way around. Do you want me to relay that and then attend a later meeting?

Get [Outlook for Android](#)

From: [REDACTED]
Sent: Tuesday, October 11, 2022 6:38:05 PM
To: [REDACTED]
Subject: RE: Meeting tomorrow

Hi [REDACTED]

I won't have much to update on tomorrow – we are in the process of finalising our material for the Stage 2A engagement workshops [REDACTED] You and your HSPG colleagues should have received invitations to the workshops in early November and we will be giving a detailed summary of progress to date at those workshops: I would suggest that we catch up after the workshops (mid to late November) to answer any questions you have and to close out the issues that we discussed at the previous HSPG meeting. Does that sound ok to you?

Thanks,
[REDACTED]

From: [REDACTED]
Sent: 11 October 2022 17:10
To: [REDACTED]
Subject: Meeting tomorrow

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Hi [REDACTED] - sorry was tied up most of day. I think to come along briefly would be good. Can take your item first, have lots of other stuff to deal with too

Get [Outlook for Android](#)



Flight Operations Performance Safety Committee (FLOPSC) 13 October 2022



Airspace Modernisation Programme

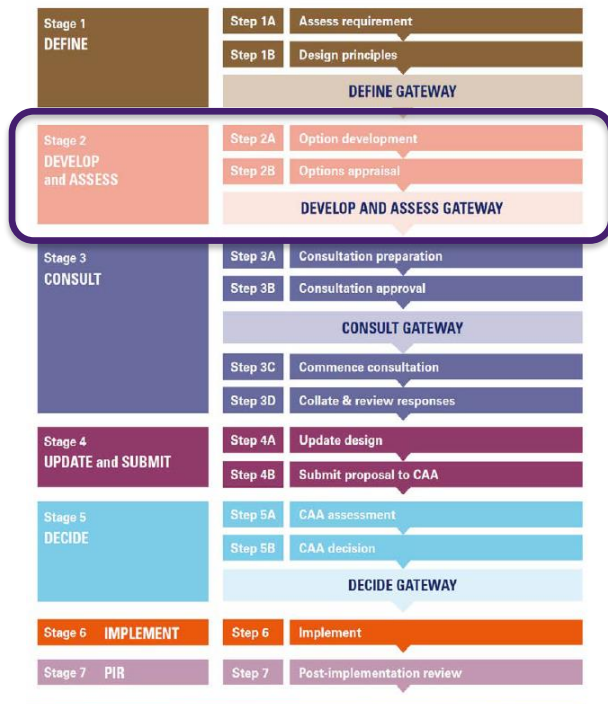
13th October 2022

Heathrow

Heathrow Airspace Modernisation Airspace Change Proposal

- Heathrow is modernising airspace in accordance with the wider UK Airspace Modernisation Strategy ([CAP1711](#)). The aims of the strategy are:
 - maintaining and enhancing high aviation safety standards
 - securing the efficient use of airspace and enabling integration
 - avoiding flight delays by better managing the airspace network
 - improving environmental performance by reducing emissions and by better managing noise
 - facilitating defence and security objectives.
- Heathrow began an Airspace Change Proposal (ACP) in April 2021. Details are available on the [CAA's Airspace Change Portal](#)
- Airspace change is a 7 Stage process and Heathrow completed Stage 1 (Define) in February 2022.

We are now at Stage 2 of the ACP process



- Stage 2 is known as “Develop and Assess”
- We begin this stage (Step 2A) by developing future airspace design options and taking these options through an assessment of likely impacts
- We start with a long list of potential options, and shortlist these based on the assessment results
- We will engage with stakeholders throughout Stage 2 including the statutory requirement to share our Comprehensive List of Options (scheduled for early November)
- We expect to complete Stage 2 in September 2023

Indicative Timeline

CAP1616	2021	2022	2023	2024	2025	2026	2027	2028	2029
Stage 1 Define	Active	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed
Stage 2 Develop & Assess	Completed	WE ARE HERE	Active	Completed	Completed	Completed	Completed	Completed	Completed
Stage 3 Consult	Completed	Completed	Completed	Active	Active	Completed	Completed	Completed	Completed
Stage 4 Update & Submit	Completed	Completed	Completed	Completed	Completed	Active	Active	Completed	Completed
Stage 5 CAA Decide	Completed	Completed	Completed	Completed	Completed	Completed	Active	Completed	Completed
Stage 6 Implement	Completed	Completed	Completed	Completed	Completed	Completed	Active	Active	Active


Our current engagement activity.

1. **Comprehensive List of Options Engagement:** *Statutory* engagement required by CAP1616.
 - 1-15 November: 6 Community Workshops and 6 Industry Workshops
 - If you would like to be included in this engagement activity, please email airspace@heathrow.com by 19th October 2022
2. Further engagement activities will take place in Q1 & Q2 of 2023.

Note – A full public consultation will take place during Stage 3 of the process – likely to be in 2025

Heathrow

November 2022



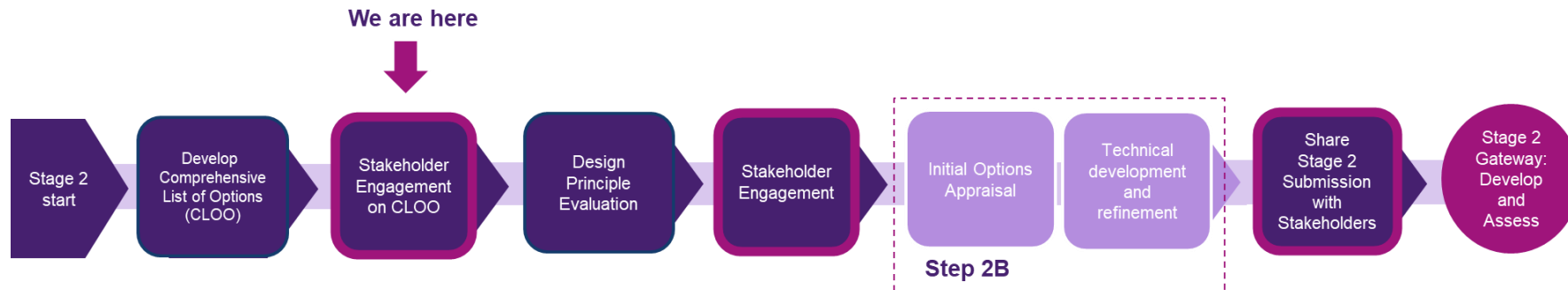
Airspace Modernisation: Airspace Change Proposal
Update to NACF
23rd November 2022

Heathrow

Thank you to those who attended our recent Stage 2A Engagement workshops: we appreciate the time that you gave for this engagement

Where are we in the process?

- We are currently at Stage 2A of the CAP1616 Airspace Change Process
- We have developed our comprehensive list of flight path options and conceptual ideas to meet the Design Principles set out at Stage 1
- We recently completed engagement workshops with our community and industry stakeholders



What next?

- We will review and consider all feedback and carry out a Design Principle Evaluation, assessing each flight path option against each Design Principle
- We will carry out further stakeholder engagement (additional to CAP1616) in Q1 2023 once the Design Principle Evaluation is complete

Please use our feedback form to provide feedback on our approach to Stage 2A

Deadline is **5:00pm on Friday 9th December**

If you have any additional questions or require any clarification on the material, please email us at airspace@heathrow.com



From: [REDACTED]
Sent: 14 December 2022 12:57

To: [REDACTED]

Cc: [REDACTED]

Subject: HSPG Meeting: Wednesday 7 December

Hi All,

[REDACTED] and I attended the HSPG meeting last week, to provide an overview of our recent Stage 2A Engagement and to answer questions to support HSPG in drafting their feedback. It was a productive and friendly session and the HSPG members were grateful for Heathrow giving the time to take them through the material and answer their questions. The group discussed some of the key themes to their Stage 2A feedback whilst we were present at the session, and committed to providing feedback from both HSPG as a whole [REDACTED] and from some of the attendees in their role as Local Authority representatives.

Please let [REDACTED] know if you have any questions, and feel free to share this meeting note with others who might be interested.

Thanks,

[REDACTED]

Attendees (key area of interest in brackets):

- [REDACTED] – HSPG Chair/Consultant
- [REDACTED] – HSPG Consultant
- [REDACTED] – Buckinghamshire (environment)
- [REDACTED] – Ealing (environment)
- [REDACTED] – Hounslow (de-carbonisation/environment)
- [REDACTED] – Runnymede (climate change, sustainability)
- [REDACTED] – Runnymede (climate change)
- [REDACTED] – Slough (environment)
- [REDACTED] – Spelthorne (pollution, air quality)

- ██████████ – Spelthorne (environmental health, noise)
- ██████████ – Spelthorne (climate change)
- ██████████ – Surrey CC (aviation, DCO, ACP)
- ██████████ – EnterpriseM3
- ██████████ – HAL
- ██████████ – HAL

Topics:

1. There was a brief discussion re the format of HSPG and whether it is appropriate to continue with just the one HSPG forum, rather than the multiple working groups that existed during the Expansion programme (AQ, environment, noise etc). Attendees agreed this will be considered over the coming months and additional sub-groups may be set up if required. ██████████ suggested that it is better for the group to stay integrated.
2. ██████ introduced ██████ to the group as the new Stakeholder Engagement Lead within the airspace team. The HSPG attendees welcomed ██████ and offered to each briefly introduce themselves to ██████ stating the LA they represent and their key areas/topics of interest.
3. ██████ presented the Stage 2A Engagement slides, setting out Heathrow's CLOO and the approach that was taken to develop it. One hour was allocated to this slot so ██████ explained that it wasn't possible to go through the slides at the same pace we did in the engagement workshops, but instead focussed on key points and signposted where the attendees would find further information in the slides. ██████ thanked ██████ for the presentation and asked for any questions from HSPG attendees.
 - a. ██████████ stated that ██████ agreed that Heathrow had clearly used the design principles to develop the CLOO. However, ██████ said there were elements within the slide pack that ██████ found confusing. ██████ wanted to understand how night flights and respite would work together, rather than consider them as separate issues. ██████ responded that detail on how the various potential concepts will work together will come at Stage 3, when we consult on proposed flight paths and share the full impacts of them at a public consultation. We are still early in the design process and we need to explore how each of the concepts might best deliver the design principles before we consider how to integrate them into a design solution.
 - b. ██████ was also concerned about "noise sewers" resulting from concentrated PBN routes: ██████ asked whether dispersal of routes might really be achievable in a PBN environment. ██████ informed the group that Heathrow is looking at the feasibility of enabling dispersion in a PBN environment via a study with NATS and other airports.
 - c. ██████ asked for more information on the PBN dispersal study, including when the results are due. ██████ said ██████ would check with the technical team and come back with any more information.
 - d. ██████████ asked when stakeholders could expect to see information relating to air quality. ██████ said ██████ would check whether air quality was to be considered within the DPE or the IOA.
 - e. ██████████ queried whether there was an order of priority within the design principles, or within the various policy requirements that are captured in DP2. ██████ suggested that Heathrow will be forced to make trade-offs between different objectives and stakeholders would like to understand more about which policy requirements or design principles are likely to take priority. ██████ explained the difference between the "must" and "should" design principles. ██████ also explained that the DPE and IOA will together ensure we consider a wide range of different

policies and principles and we will be transparent with stakeholders where we have discontinued an option or prioritised one over another.

█ asked whether we have a list of all the relevant policies we will need to consider.

█ **responded that we don't yet have a list of all relevant policies but we had been asked to provide this previously by another stakeholder and we would look to share something on this with HSPG at an appropriate time.**

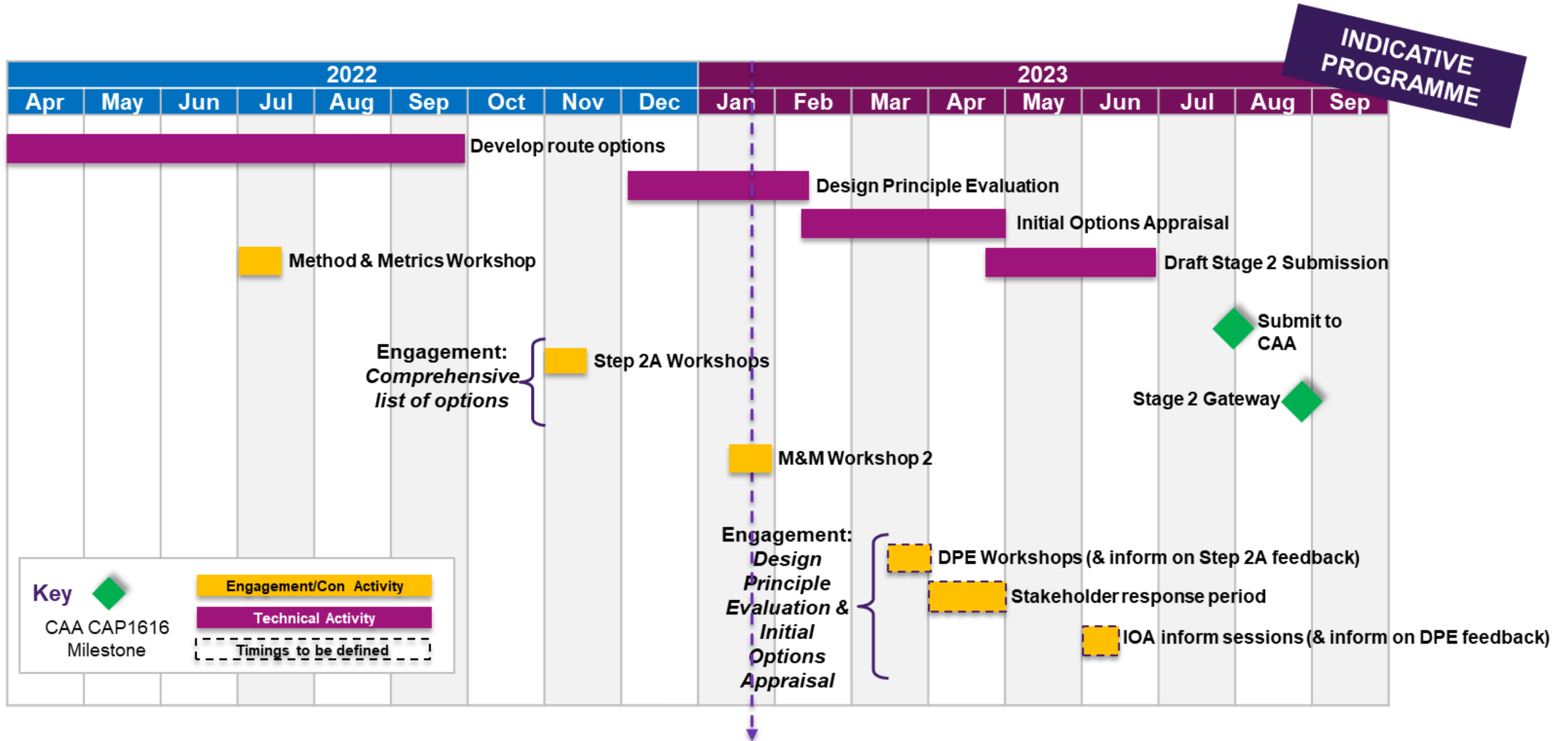
- f. █ asked for clarification about Heathrow's plans for holding stacks. █ responded that holding stacks will be required in some form for safety reasons and for particularly busy times, but that they are likely to be further away and higher up than today. █ explained that the design of holding stacks falls within NATS remit since they are re-designing the airspace above 7000ft. █ assured the group that Heathrow is working closely with NATS to explore different options for future aircraft holding.
- g. █ commented that our maps in the engagement material show the Surrey Council boundary but not the borough boundaries within it. We have shown borough boundaries for other counties.
█ **to check and to provide a map with Surrey's borough boundaries to relevant HSPG members if appropriate.**
█
█
- h. █ queried whether Heathrow would be looking to introduced "Managed Preference" in place of the current Westerly Preference. This was a potential element of the previous ACP for Expansion and █ was supportive of it as a way to manage noise impacts more fairly. █ responded that Managed Preference was not part of this ACP. █ said that █ should mention Managed Preference within █ feedback if █ felt it was something that Heathrow should be looking to introduce.
█ reminded the group that this ACP is to include departure routes from the northern runway when on easterlies to reflect the removal of the Cranford Agreement.
- i. █ asked for clarification on the assumptions that Heathrow is making re the integration of Advanced Air Mobility into this ACP. █ stated that AAM is likely to be introduced into service in the coming years and that Heathrow would appear to be a good location for it. █ asked whether Heathrow has working assumptions on what AAM at Heathrow is likely to involve.
█ responded that Heathrow is incorporating information related to new technologies as and when it becomes available, but there are still a lot of unknowns including requirements, capabilities and noise footprints. Heathrow has been involved in trials and research programmes and it is in our interest to minimise the need for future changes to the airspace by considering any known requirements into this ACP. The move towards AAM needs to be driven by Government to ensure airports are joined up.

January 2023

Airspace Modernisation: Airspace Change Proposal

Heathrow

Heathrow's Stage 2 Plan

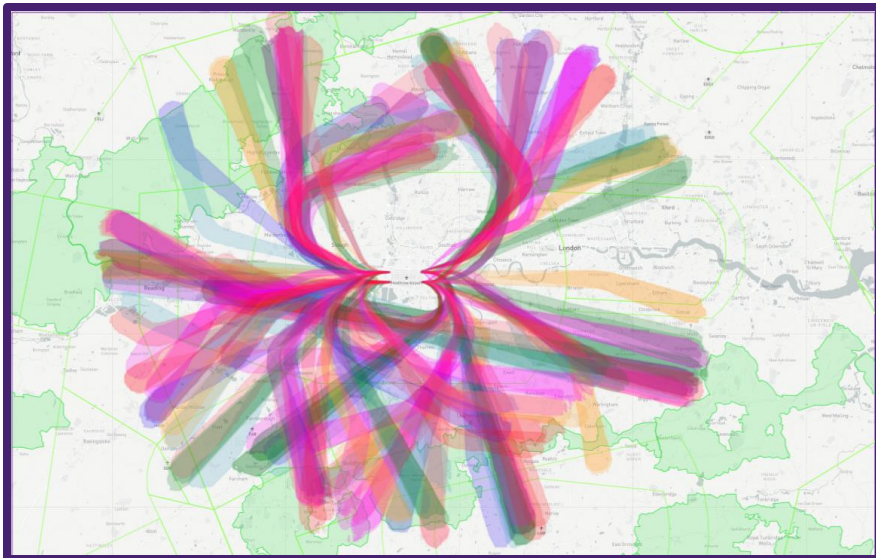


Update: Design Principle Evaluation

The DPE is underway: this will complete Stage 2A.

Work to date has indicated that all of the options are likely to be taken through to Stage 2B (Initial Options Appraisal): *we do not plan to discount any options based on the DPE results.*

The results of the DPE will be shared at engagement workshops (planned for March 2023), providing an opportunity for stakeholder questions and feedback.



The comprehensive list of departure options

The Design Principle Evaluation:

Each of the options is being assessed against each design principle using a combination of qualitative and quantitative assessment.

The options evaluated in the DPE are:

1. PBN departure options
2. PBN arrival options
3. Vectored arrival options

CAP1616: Purpose of Options Appraisal

Options appraisal is a means of assessing the possible different approaches for delivering a desired outcome (in this case, the outcome is the introduction of airspace modernisation at Heathrow).

The Options Appraisal should deliver clear and comparable evidence about a range of factors so that different airspace design options can be compared and assessed on the basis of these factors.

The environmental factors for assessment are set out in CAP1616:

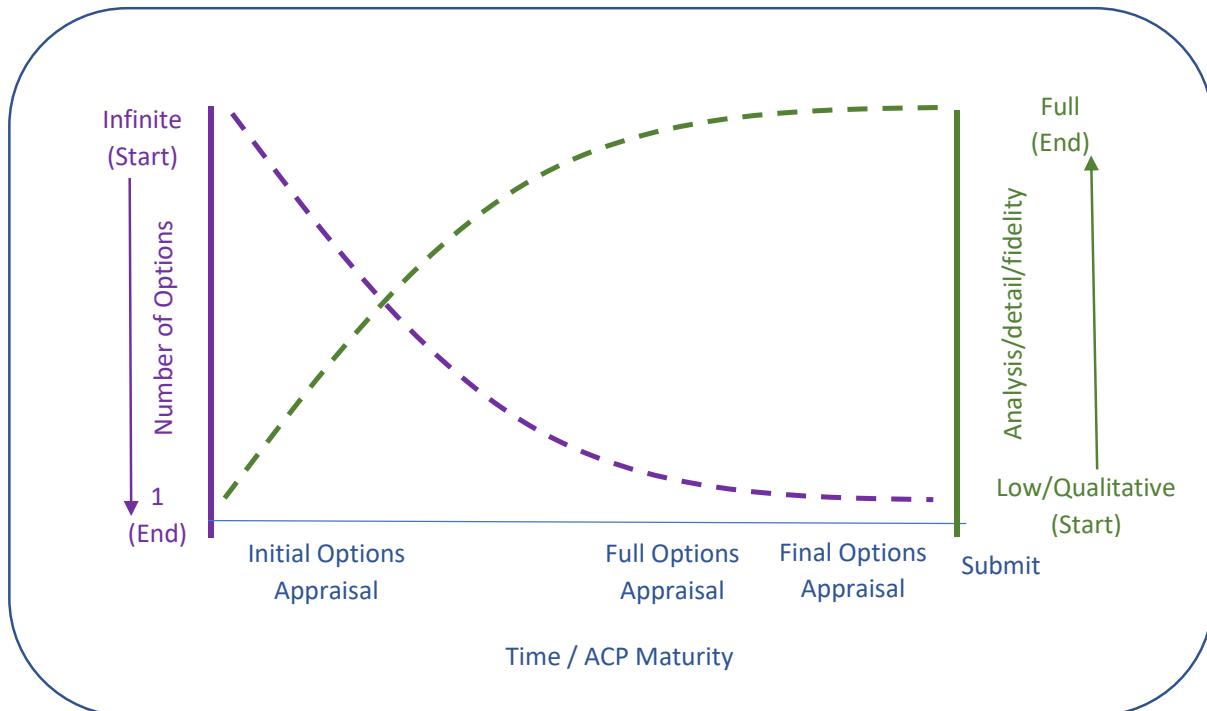
- Noise
- CO₂ emissions
- Local air quality
- Tranquility
- Biodiversity

The options appraisal process requires each option to be assessed against a “do nothing” scenario to understand the impacts (positive and negative) of each option. However, CAP1616 recognises that “do nothing” is not always a feasible option for consideration (e.g. the introduction of airspace modernisation is government policy).

CAP1616: Phases of Appraisal

The Initial Options Appraisal (IOA) is the first of three appraisal phases, and **the level of detail will increase as we move through the appraisal phases**

Stage 2B: 'Initial' Options Appraisal:	Qualitative and/or quantitative assessment of longlist of options
Stage 3A: 'Full' Options Appraisal:	Quantitative assessment of shortlist of options, shared at consultation
Stage 4A: 'Final' Options Appraisal:	Update based on any changes required following public consultation



CAP1616 requires an 'Initial' Options Appraisal (IOA) to be prepared at Stage 2B which can be based on **qualitative information rather than quantitative analysis***, however Heathrow intends to use data wherever possible to ensure the appraisal is robust, consistent and evidence-based.

* Appendix B, B8

Upcoming Activities

KEY HEATHROW ENGAGEMENT ACTIVITIES

March – DPE & 2A Feedback Workshops

- We will present the feedback we received from the November CLOO workshops and Heathrows' response to the feedback.
- We will also share our approach and results to the Design Principle Evaluation.
- Stakeholders will also have the opportunity to feedback to us following the workshops.

June – IOA Sessions

- Before Heathrow submits all Stage 2 documentation, we will share all work with stakeholders.

Other Activities

- **CAP1616 Consultation ongoing until March**

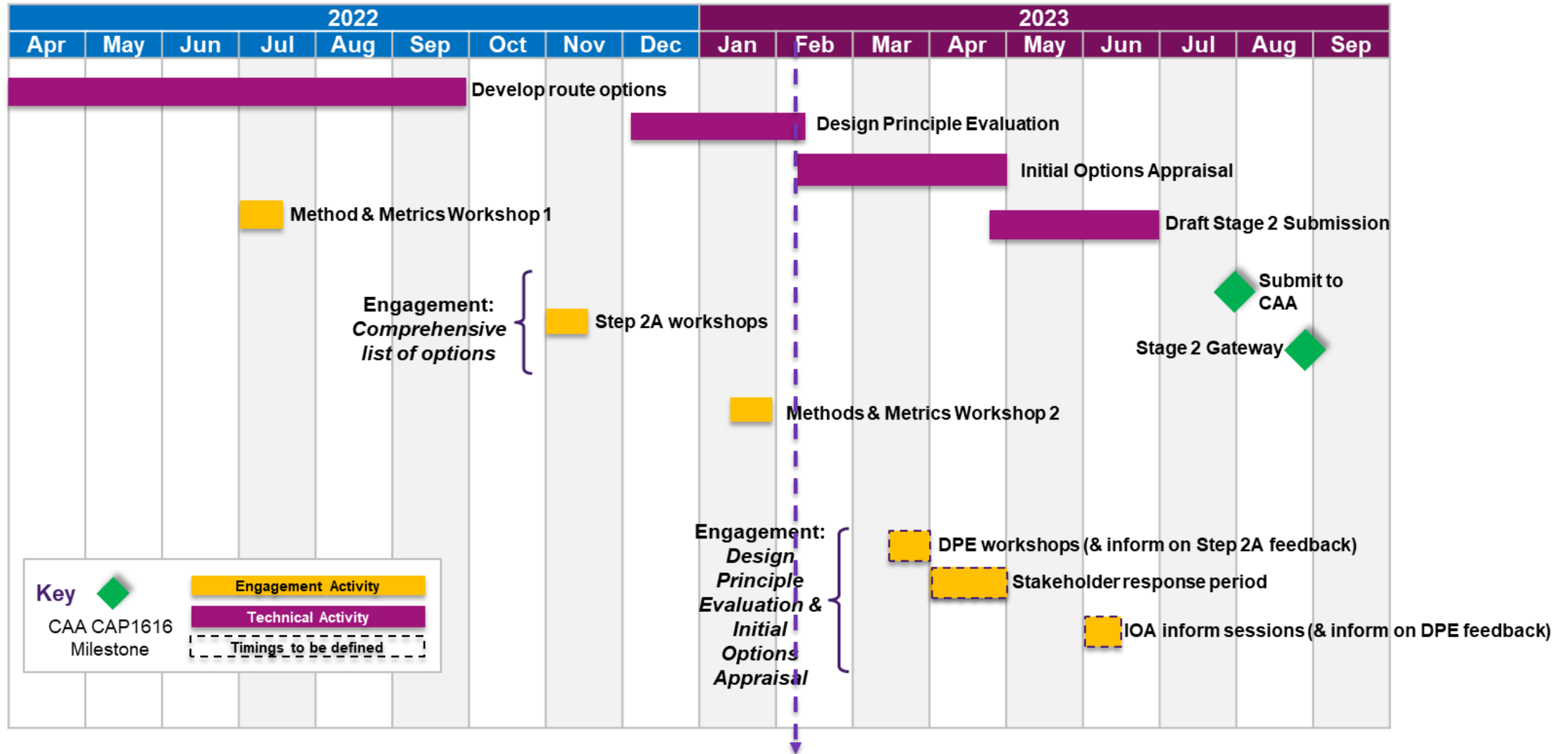
February 2023

Airspace Modernisation: Airspace Change Proposal

February FLOPSC Update

Heathrow

Heathrow's Stage 2 Plan



Key

- ◆ CAA CAP1616 Milestone
- Engagement Activity
- Technical Activity
- - - Timings to be defined

WE ARE HERE

CAP1616: Purpose of Options Appraisal

Options appraisal is a means of assessing the possible different approaches for delivering a desired outcome (in this case, the outcome is the introduction of airspace modernisation at Heathrow).

The Options Appraisal should deliver clear and comparable evidence about a range of factors so that different airspace design options can be compared and assessed on the basis of these factors.

The environmental factors for assessment are set out in CAP1616:

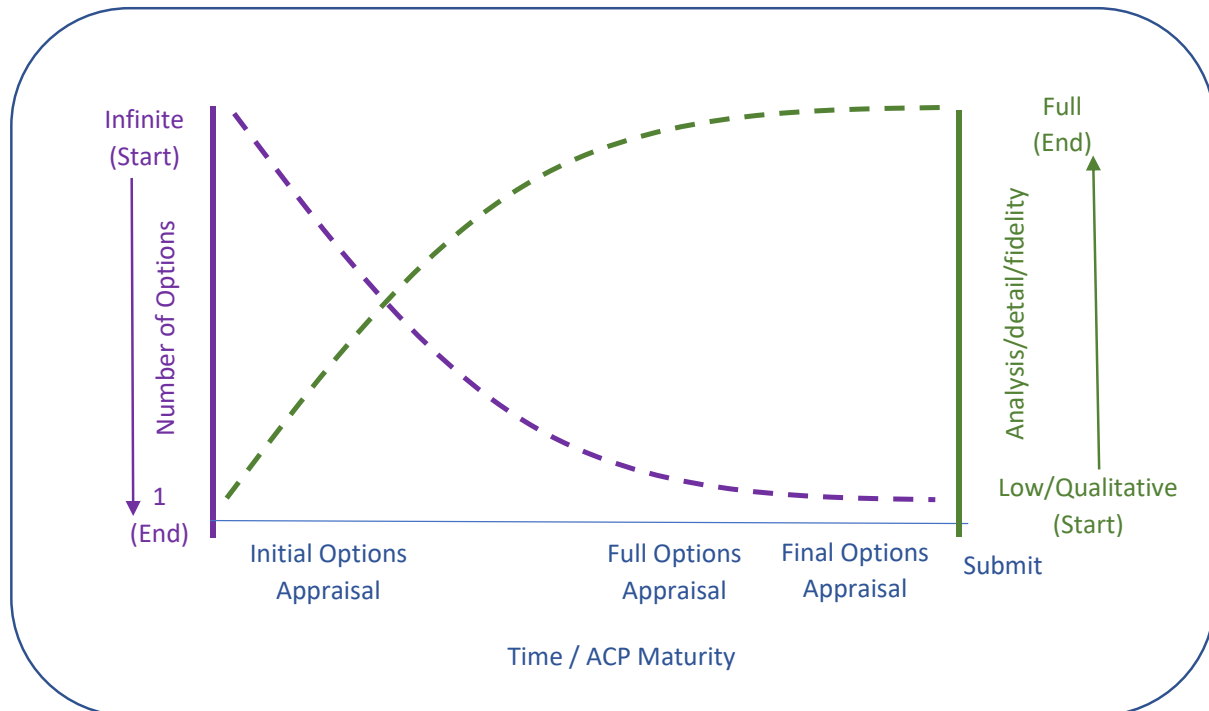
- Noise
- CO₂ emissions
- Local air quality
- Tranquility
- Biodiversity

The options appraisal process requires each option to be assessed against a “do nothing” scenario to understand the impacts (positive and negative) of each option. However, CAP1616 recognises that “do nothing” is not always a feasible option for consideration (e.g. the introduction of airspace modernisation is government policy).

CAP1616: Phases of Appraisal

The Initial Options Appraisal (IOA) is the first of three appraisal phases, and **the level of detail will increase as we move through the appraisal phases**

Stage 2B: 'Initial' Options Appraisal:	Qualitative and/or quantitative assessment of longlist of options
Stage 3A: 'Full' Options Appraisal:	Quantitative assessment of shortlist of options, shared at consultation
Stage 4A: 'Final' Options Appraisal:	Update based on any changes required following public consultation



CAP1616 requires an 'Initial' Options Appraisal (IOA) to be prepared at Stage 2B which can be based on **qualitative information rather than quantitative analysis***, however Heathrow intends to use data wherever possible to ensure the appraisal is robust, consistent and evidence-based.

* Appendix B, B8

Upcoming Activities

KEY HEATHROW ENGAGEMENT ACTIVITIES

March – Design Principle Evaluation & 2A Feedback Workshops (4 week stakeholder feedback period to follow)

June – Initial Options Appraisal/Stage 2 Submission Sessions

Other Airspace Modernisation Activities

- CAP1616 Guidance Consultation ongoing until **5th March**. The consultation document and access to the survey can be found here: <https://consultations.caa.co.uk/safety-and-airspace-regulation-group/acp2022/>
- NERL West airspace deployment

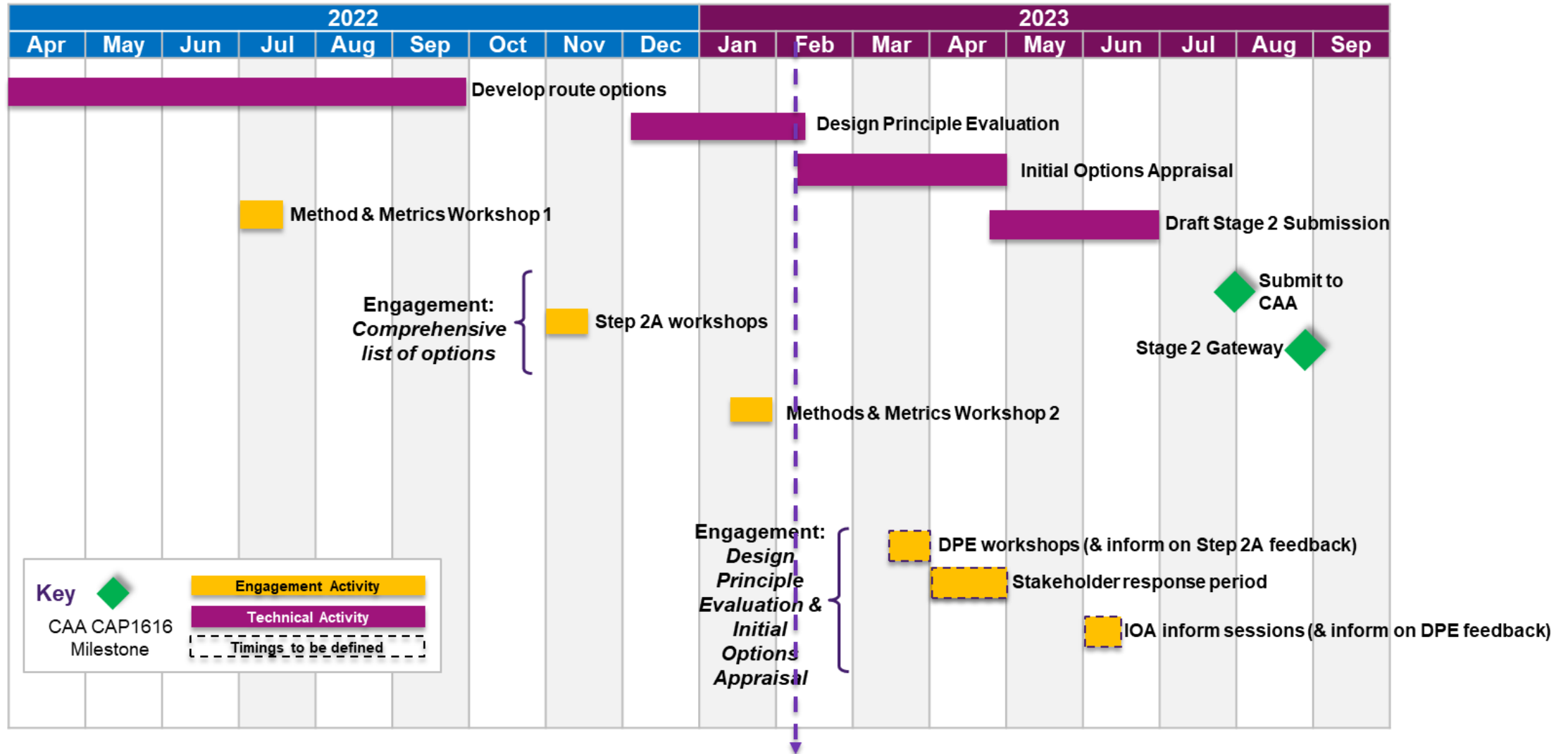
February 2023



Airspace Modernisation: Airspace Change Proposal
February NACF Update

Heathrow

Heathrow's Stage 2 Plan



Key

- ◆ CAA CAP1616 Milestone
- Engagement Activity
- Technical Activity
- - - - - Timings to be defined

WE ARE HERE

CAP1616: Purpose of Options Appraisal

Options appraisal is a means of assessing the possible different approaches for delivering a desired outcome (in this case, the outcome is the introduction of airspace modernisation at Heathrow).

The Options Appraisal should deliver clear and comparable evidence about a range of factors so that different airspace design options can be compared and assessed on the basis of these factors.

The environmental factors for assessment are set out in CAP1616:

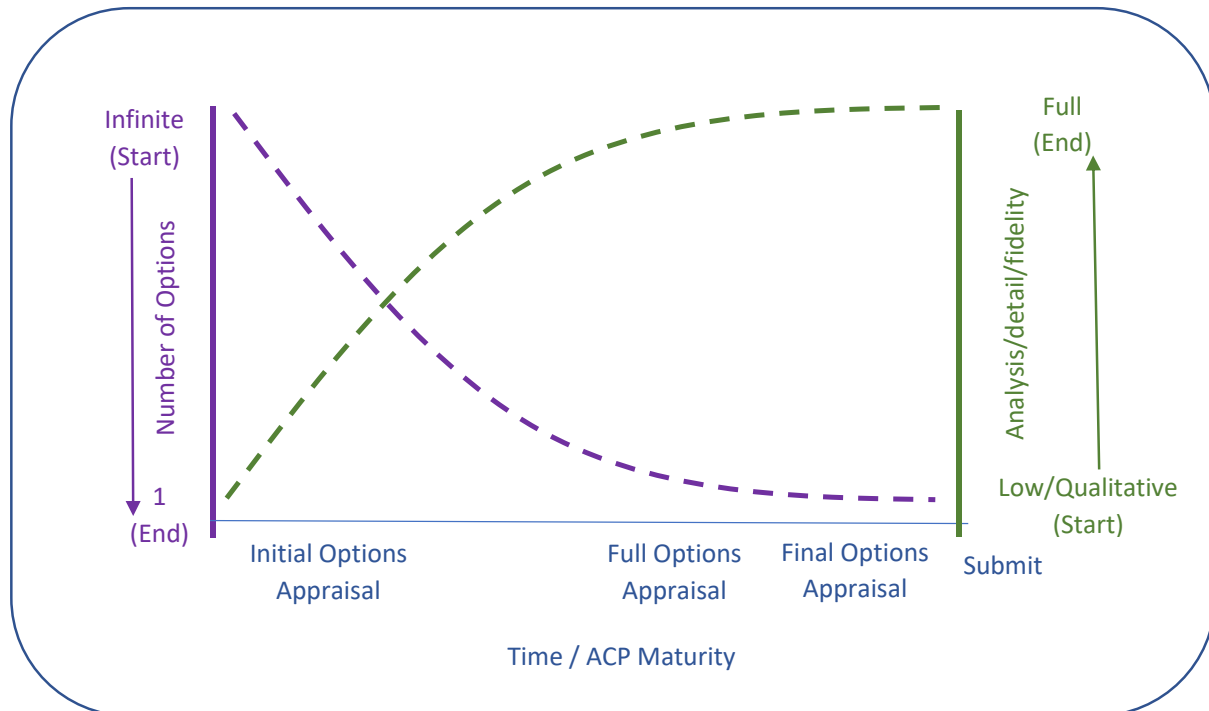
- Noise
- CO₂ emissions
- Local air quality
- Tranquility
- Biodiversity

The options appraisal process requires each option to be assessed against a “do nothing” scenario to understand the impacts (positive and negative) of each option. However, CAP1616 recognises that “do nothing” is not always a feasible option for consideration (e.g. the introduction of airspace modernisation is government policy).

CAP1616: Phases of Appraisal

The Initial Options Appraisal (IOA) is the first of three appraisal phases, and **the level of detail will increase as we move through the appraisal phases**

Stage 2B: 'Initial' Options Appraisal:	Qualitative and/or quantitative assessment of longlist of options
Stage 3A: 'Full' Options Appraisal:	Quantitative assessment of shortlist of options, shared at consultation
Stage 4A: 'Final' Options Appraisal:	Update based on any changes required following public consultation



CAP1616 requires an 'Initial' Options Appraisal (IOA) to be prepared at Stage 2B which can be based on **qualitative information rather than quantitative analysis***, however Heathrow intends to use data wherever possible to ensure the appraisal is robust, consistent and evidence-based.

* Appendix B, B8

Upcoming Activities

KEY HEATHROW ENGAGEMENT ACTIVITIES

March – Design Principle Evaluation & 2A Feedback Workshops (4 week stakeholder feedback period to follow)

June – Initial Options Appraisal/Stage 2 Submission Sessions

Other Airspace Modernisation Activities

- CAP1616 Guidance Consultation ongoing until **5th March**. The consultation document and access to the survey can be found here: <https://consultations.caa.co.uk/safety-and-airspace-regulation-group/acp2022/>
- NERL West airspace deployment

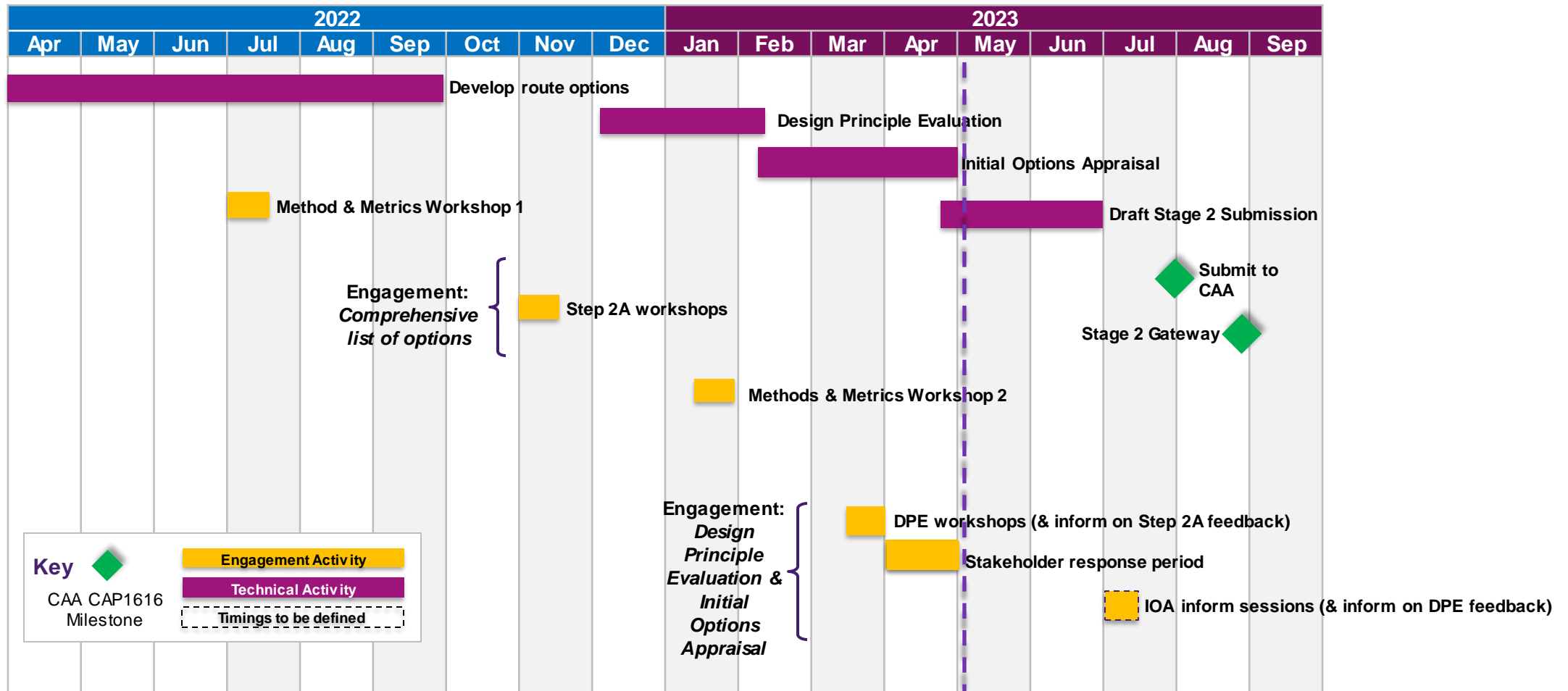
May 2023

Airspace Modernisation: Airspace Change Proposal

May FLOPSC Update

Heathrow

Heathrow's Stage 2 Plan

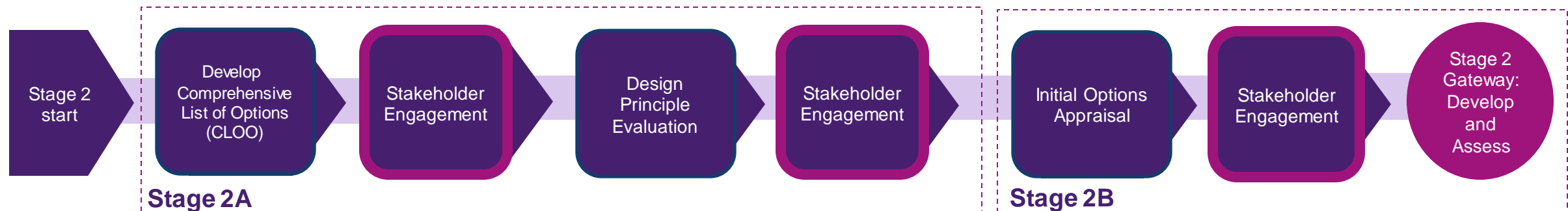


We plan to host further engagement activities in Stage 3, followed by a formal full public consultation estimated c. 2025

WE ARE HERE

CAP1616 Stage 2 Recap

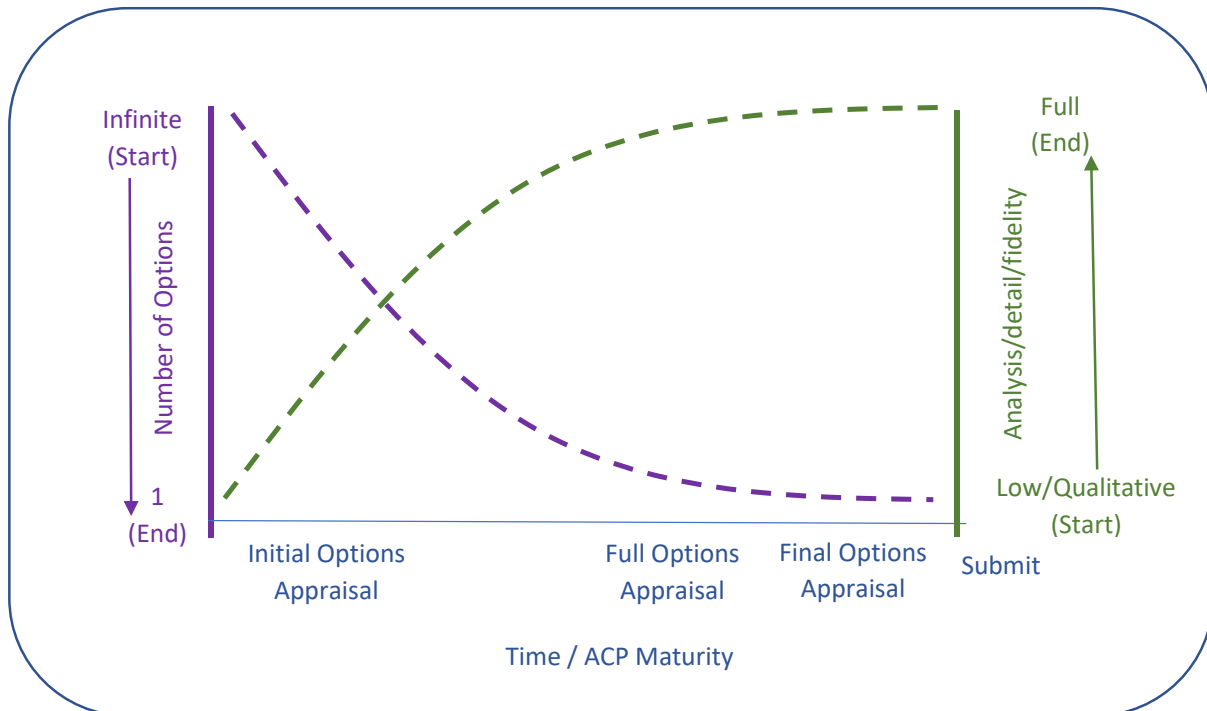
- At Stage 2 CAP1616 requires us to develop a list of options that align with the Statement of Need and Design Principles developed with stakeholders at Stage 1
- We undertook a Design Principle Evaluation (DPE) to provide a high-level summary of how the design options have responded to the Design Principles
- We are required to produce an Initial Options Appraisal (IOA) that satisfies the requirements in Appendix E of CAP1616 including cost benefit analyses of associated noise and environmental considerations
- We will review the DPE results alongside the more detailed IOA results to assess the likely impact of the options. This will inform the process for designing system options in Stage 3 and shortlisting the options



CAP1616: Phases of Appraisal

The Initial Options Appraisal (IOA) is the first of three appraisal phases, and **the level of detail will increase as we move through the appraisal phases**

Stage 2B: 'Initial' Options Appraisal:	Qualitative and/or quantitative assessment of longlist of options
Stage 3A: 'Full' Options Appraisal:	Quantitative assessment of shortlist of options, shared at consultation
Stage 4A: 'Final' Options Appraisal:	Update based on any changes required following public consultation



CAP1616 requires an 'Initial' Options Appraisal (IOA) to be prepared at Stage 2B which can be based on **qualitative information rather than quantitative analysis***, however Heathrow has used data wherever possible to ensure the appraisal is robust, consistent and evidence-based.

* Appendix B, B8

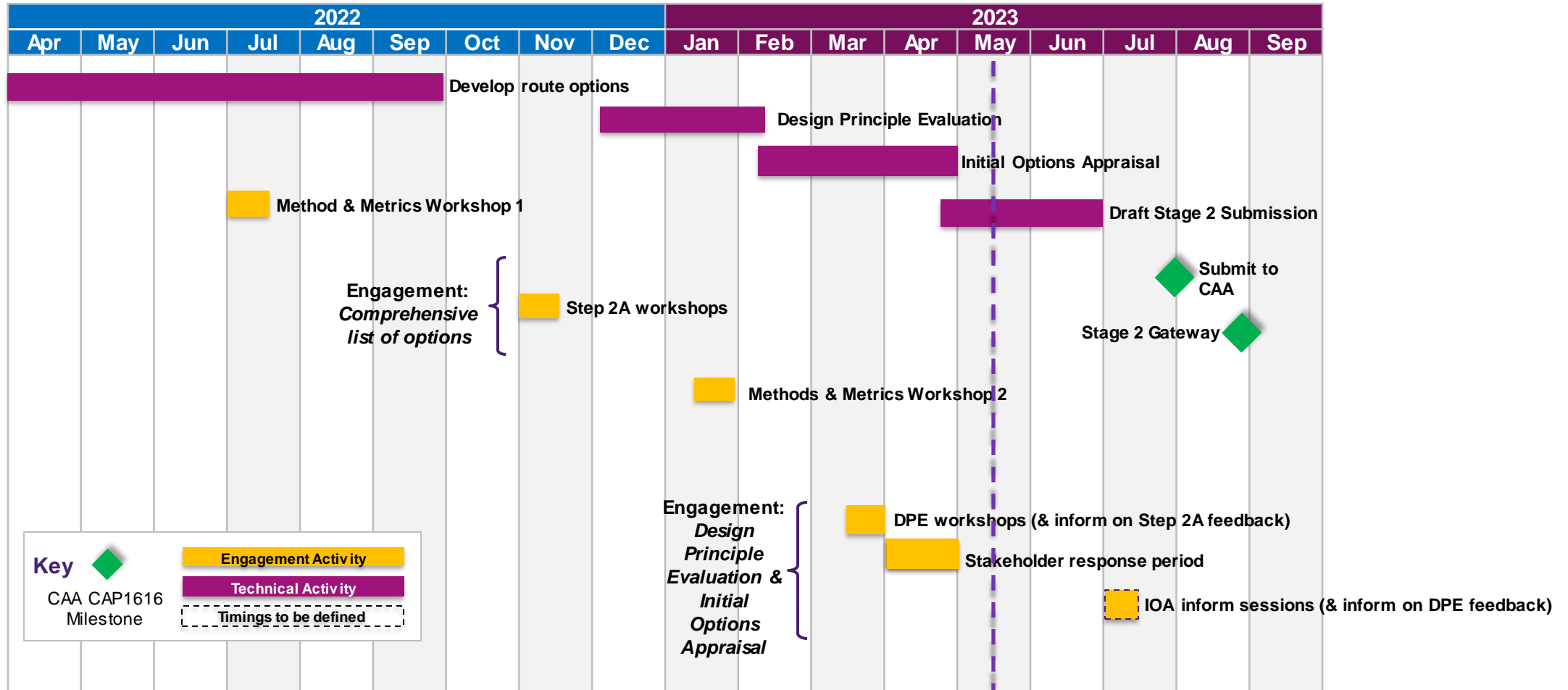
May 2023

Airspace Modernisation: Airspace Change Proposal

May HSPG Update

Heathrow

Heathrow's Stage 2 Plan

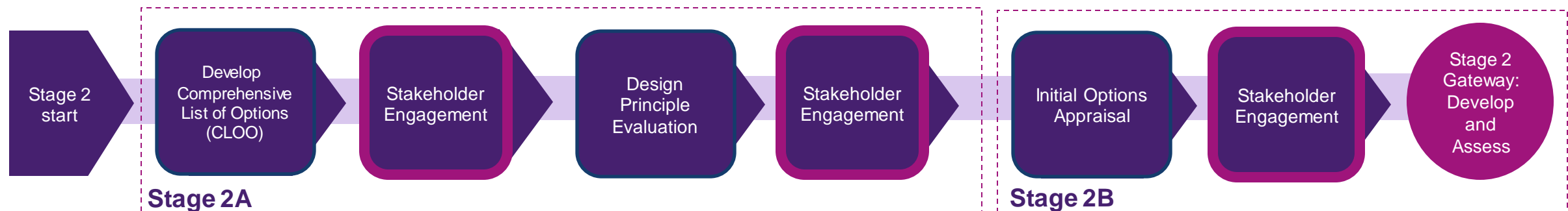


We plan to host further engagement activities in Stage 3, followed by a formal full public consultation estimated c. 2025

WE ARE HERE

CAP1616 Stage 2 Recap

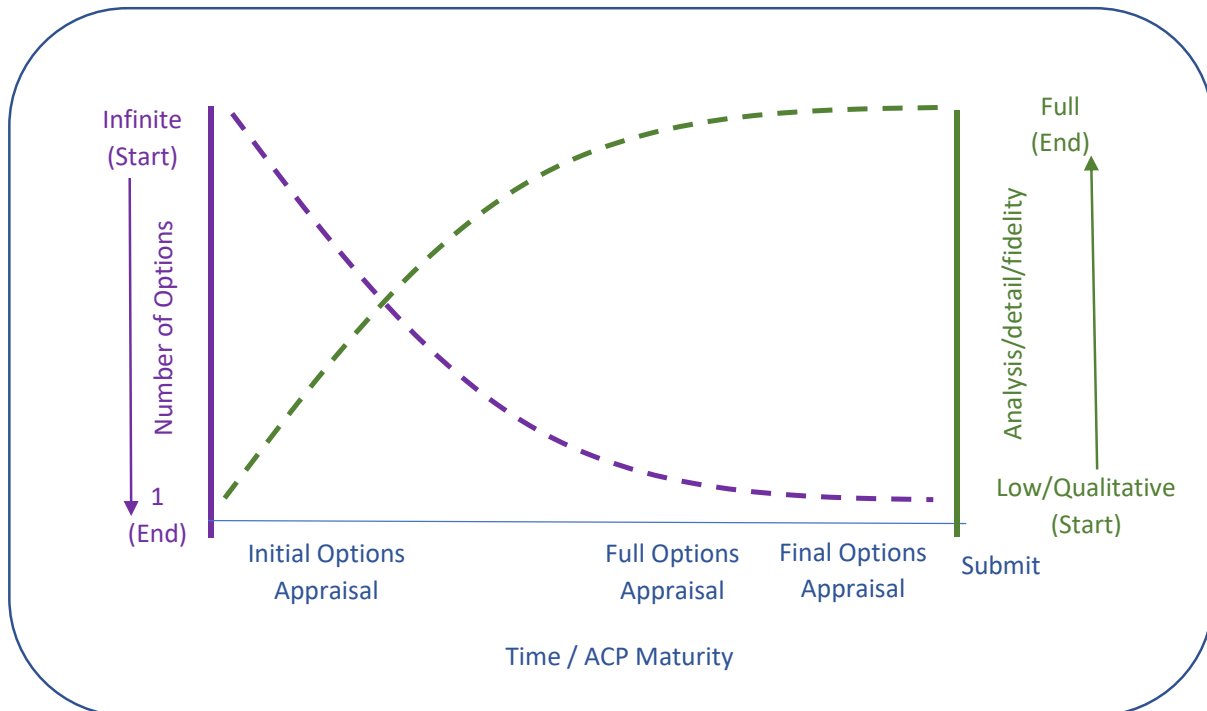
- At Stage 2 CAP1616 requires us to develop a list of options that align with the Statement of Need and Design Principles developed with stakeholders at Stage 1
- We undertook a Design Principle Evaluation (DPE) to provide a high-level summary of how the design options have responded to the Design Principles
- We are required to produce an Initial Options Appraisal (IOA) that satisfies the requirements in Appendix E of CAP1616 including cost benefit analyses of associated noise and environmental considerations
- We will review the DPE results alongside the more detailed IOA results to assess the likely impact of the options. This will inform the process for designing system options in Stage 3 and shortlisting the options



CAP1616: Phases of Appraisal

The Initial Options Appraisal (IOA) is the first of three appraisal phases, and **the level of detail will increase as we move through the appraisal phases**

Stage 2B: 'Initial' Options Appraisal:	Qualitative and/or quantitative assessment of longlist of options
Stage 3A: 'Full' Options Appraisal:	Quantitative assessment of shortlist of options, shared at consultation
Stage 4A: 'Final' Options Appraisal:	Update based on any changes required following public consultation



CAP1616 requires an 'Initial' Options Appraisal (IOA) to be prepared at Stage 2B which can be based on **qualitative information rather than quantitative analysis***, however Heathrow has used data wherever possible to ensure the appraisal is robust, consistent and evidence-based.

** Appendix B, B8*

Upcoming Engagement Activities

July – IOA Update Sessions (online)

The purpose of these sessions will be to:

- Explain the approach taken to the IOA and to share a summary of the results
- Provide an opportunity for you to ask questions and share your views on Heathrow's approach to the IOA

Email airspace@heathrow.com for more information on Heathrow's ACP and support with briefing new members

Other Activities

- CAA CAP1616 Consultation (Jan – Mar 2023) responses available to view (updated document expected Summer 2023): https://consultations.caa.co.uk/safety-and-airspace-regulation-group/acp2022/consultation/published_select_respondent
- ACOG public engagement materials available: <https://www.oneskyoneplan.uk/>
- CAA Consultation on strategic environmental assessment (SEA) and Habitats Regulation assessment (HRA) – closing 17 May 2023

May 2023

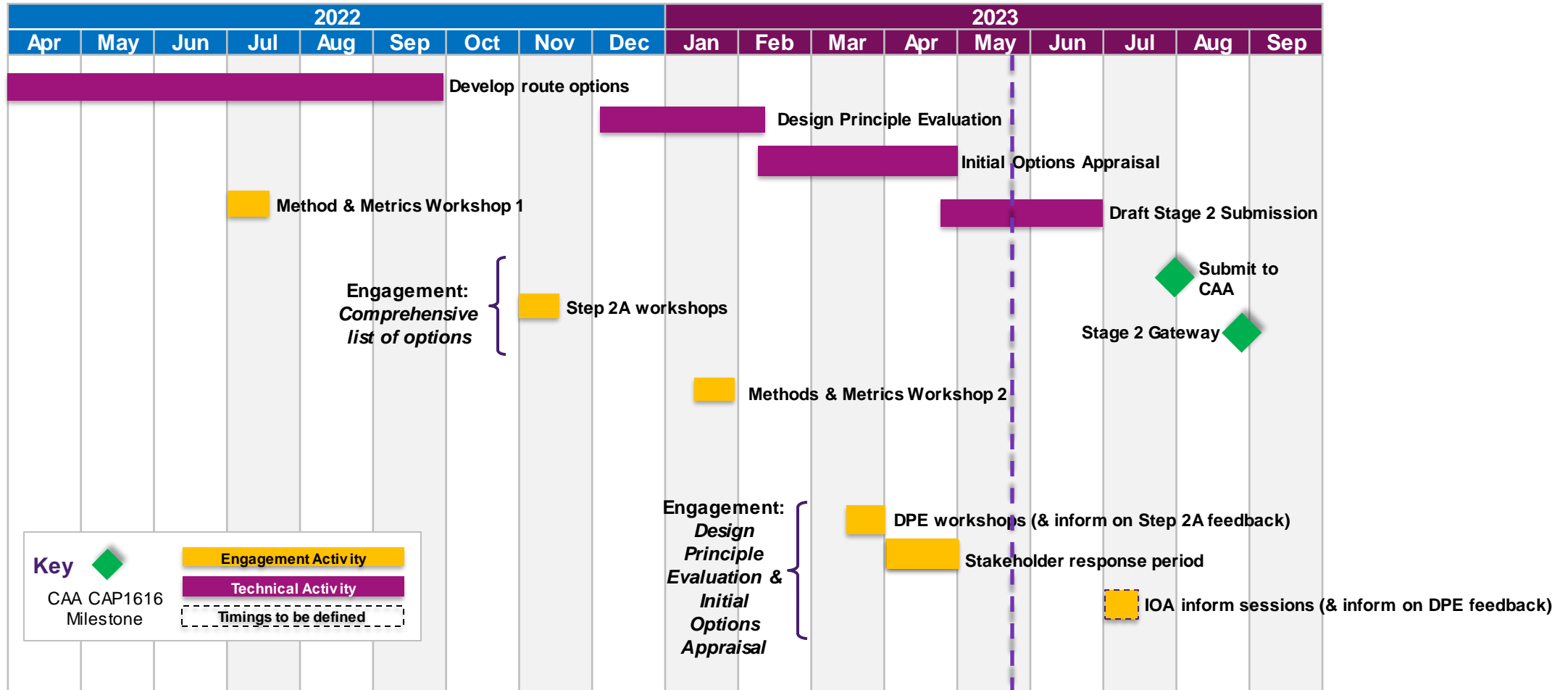
An aerial photograph of Heathrow Airport at dusk. The terminal buildings are illuminated from within, and the tarmac is lit by ground lights. Several aircraft are visible on the ground, including a large white and red aircraft in the foreground. The sky is a mix of orange, pink, and blue.

Airspace Modernisation: Airspace Change Proposal

May NACF Update

Heathrow

Heathrow's Stage 2 Plan

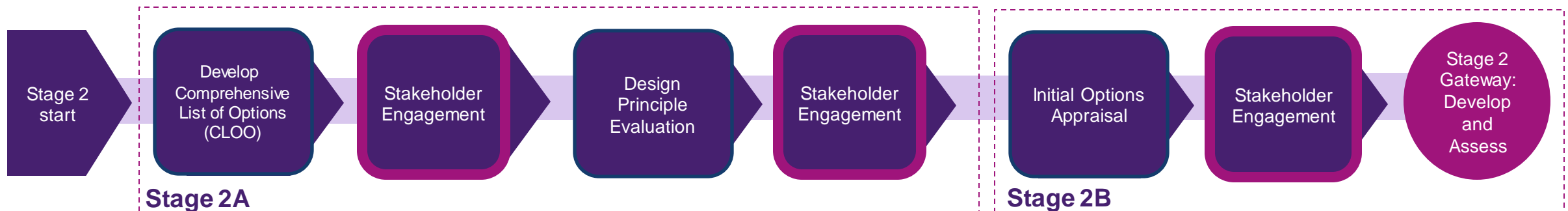


We plan to host further engagement activities in Stage 3, followed by a formal full public consultation estimated c. 2025

WE ARE HERE

CAP1616 Stage 2 Recap

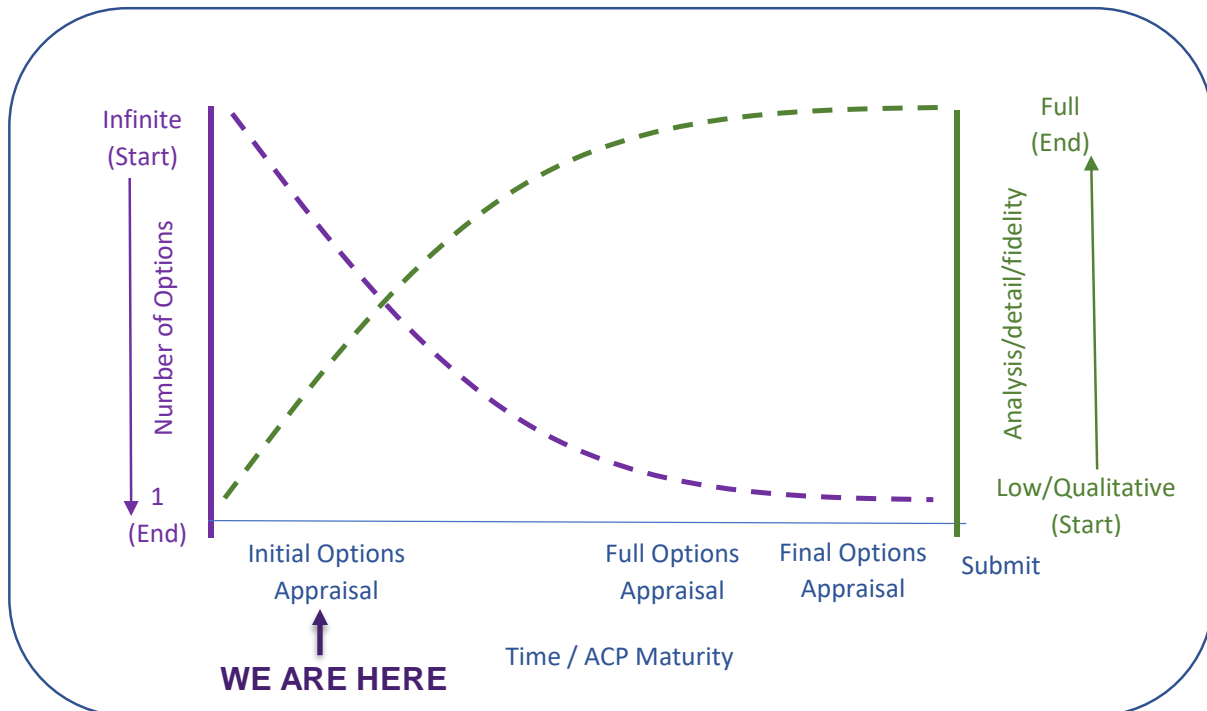
- At Stage 2 CAP1616 requires us to develop a list of options that align with the Statement of Need and Design Principles developed with stakeholders at Stage 1
- We undertook a Design Principle Evaluation (DPE) to provide a high-level summary of how the design options have responded to the Design Principles
- We are required to produce an Initial Options Appraisal (IOA) that satisfies the requirements in Appendix E of CAP1616 including analysis of associated noise and environmental considerations
- After reviewing results, we will determine a process for shortlisting the options for the Stage 2 submission



CAP1616: Phases of Appraisal

The Initial Options Appraisal (IOA) is the first of three appraisal phases, and **the level of detail will increase as we move through the appraisal phases**

Stage 2B: 'Initial' Options Appraisal:	Qualitative and/or quantitative assessment of longlist of options
Stage 3A: 'Full' Options Appraisal:	Quantitative assessment of shortlist of options, shared at consultation
Stage 4A: 'Final' Options Appraisal:	Update based on any changes required following public consultation



CAP1616 requires an 'Initial' Options Appraisal (IOA) to be prepared at Stage 2B which can be based on **qualitative information rather than quantitative analysis***, however Heathrow has used data wherever possible to ensure the appraisal is robust, consistent and evidence-based.

* Appendix B, B8

Upcoming Engagement Activities

July – IOA update online sessions

The purpose of these sessions will be to:

- Explain the approach taken to the IOA
- Explain the approach taken to the shortlisting of options
- Provide an update on Heathrow's progress with respite concepts
- Provide an opportunity for you to ask questions on Heathrow's IOA

Email
airspace@heathrow.com
for more information on
our ACP

Other Activities

- **CAA CAP1616 Consultation (Jan – Mar 2023) responses available to view (updated document expected Summer 2023):** https://consultations.caa.co.uk/safety-and-airspace-regulation-group/acp2022/consultation/published_select_respondent
- **ACOG public engagement materials available:** <https://www.oneskyoneplan.uk/>
- **CAA Consultation on strategic environmental assessment (SEA) and Habitats Regulation assessment (HRA)**

From:

Sent:

13 July 2023 09:42

To:

Cc:

Subject:

HSPG Environment and Airspace Group meeting 20th July

Caution: external email. Unless you recognise the sender and know the content is safe, do not click links or open attachments.

Dear All

We're just settling the Agenda for the E&AG meeting next week. I don't think there is a need for either of your teams to attend re NAP or ACP this time - unless you have something specifically you want to raise now? Our next meeting 19th Sept?

We will be talking about you however [REDACTED] Looking at final response to the NAP – I'll send you a letter by end of next week as we agreed and put an outline response into the online system for Monday. Very happy to talk about details of comments after that with you

On the ACP – we have the latest slide pack on the IO. An update on Gateway and Stage 3 engagement in Sept meeting would seem timely?

How does that sound?

KR

[REDACTED]

[REDACTED]

Lead Advisor
Heathrow Strategic Planning Group

From: [REDACTED]

Sent:

13 July 2023 16:21

To: [REDACTED]

Cc:

Subject:

RE: HSPG Environment and Airspace Group meeting 20th July

Hi [REDACTED]

Thanks for your email. That works fine for us as we are busy finalising our submission for the CAA at the end of this month and have nothing further to update HSPG members on since the engagement completed last week.

The next meeting in September works well timing wise, since we should have an update on the Stage 2 Gateway from the CAA and share details on our plans for engagement in Stage 3.

In the meantime though, please do get in touch if your or any member of HSPG have any questions or comments on the submission material. We will let you know when it is publicly available to view on the CAA's portal.

Kind regards,

[REDACTED]

[REDACTED]
Airspace & ATM Engagement Specialist

July 2023

Airspace Modernisation: Respite Concepts

NACF

Heathrow

An aerial photograph of Heathrow Airport at dusk. The terminal building is illuminated, and the tarmac is filled with aircraft and ground service equipment. A large aircraft is visible in the foreground on the right. The sky is a mix of orange and blue.

Heathrow's Understanding of Respite

The research activities led by Anderson Acoustics and CAA provide a number of key findings which have further informed Heathrow's understanding of respite:

1. Respite is a “*break from or a reduction in aircraft noise*”
2. Respite is (genuinely) valued by people when they are informed of it – and they certainly don't want it removed or reduced
3. Effectiveness of respite is dependent on both acoustic and non-acoustic factors (e.g. trust, awareness)
4. Respite can be predictable or unpredictable (“relief”)
5. Three different respite types can be defined based on noise level differences between operating modes i.e. is the respite being provided:
 - *Valued (>9dB LAeq T),*
 - *Noticeable (4-9dB LAeq T), or*
 - *Worth having (<4dB LAeq T)?*

Heathrow's Understanding of Respite

The research activities led by Anderson Acoustics and CAA provide a number of key findings which have further informed Heathrow's understanding of respite:

6. There is evidence that where respite through runway alternation has been in place for some time, annoyance is lower, particularly in areas where noise level differences can be considered *valued*
7. Research shows respite might be valued more highly where noise levels are higher
8. Respite can be perceived as a benefit (for those already overflowed) or considered helpful as a mitigation measure (for those newly overflowed)
9. Research results are based on people who are already overflowed (who benefit from respite) rather than on people who are not currently overflowed (who may see respite – and the “sharing” of noise – as a cost)

Airspace Modernisation at Heathrow: Respite Concepts

Heathrow's ACP to introduce Airspace Modernisation is considering three respite concepts, which can potentially be applied to any of the airspace design options:

1. Extending Departure Respite Through Runway Alternation
2. Departure Respite Through Route Alternation
3. Respite Through Alternation of Vectored Arrivals

Separate to this ACP, Heathrow is also in the process of progressing a planning application for airfield works to enable runway alternation when on easterly operations (the project is known as "Easterly Alternation"). This ACP includes the design of flight paths to and from each of Heathrow's runway ends and assumes that runway alternation will be possible on both westerly and easterly operations by the time the airspace change is implemented.

Respite Concept 1: Extending departure respite through runway alternation

- Runway alternation has been an important part of noise management at Heathrow since the 1970s.
- It benefits those affected by either departures or arrivals
- The measure is most effective under final approach and immediately beneath departure runway ends
- This concept explores whether benefits of respite from runway alternation could be extended to areas further from the airport by keeping departure routes from each runway apart for much longer



Example of departure routes from both runways which converge shortly after departure



Example of departure routes which are kept apart for longer after departure

Respite Concept 1: Extending departure respite through runway alternation



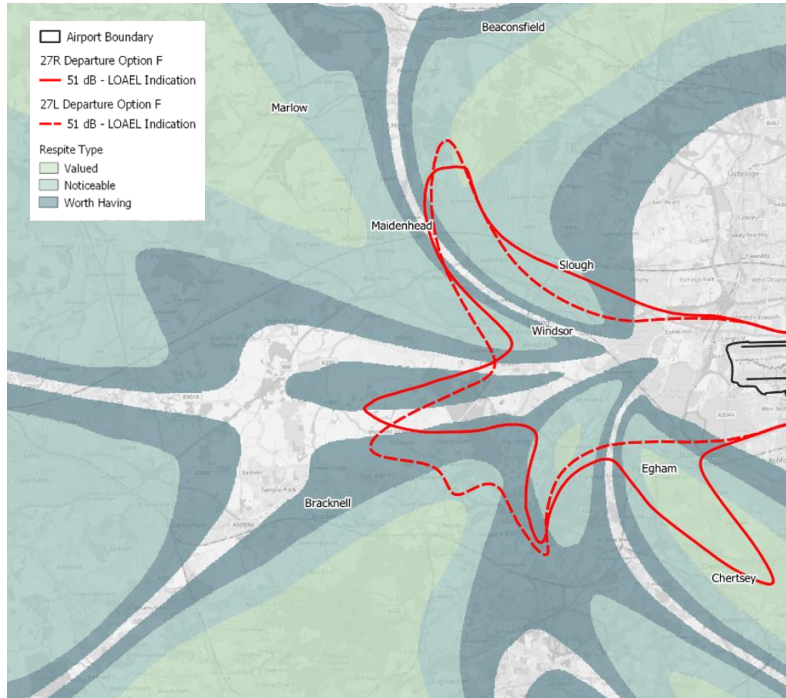
- Testing of the concept using the airspace design options has shown the potential to provide improved respite for areas currently overflown
- However, the effectiveness of this concept will be limited by the need for routes from each runway to cross each other in places

Respite Concept 2: Departure respite through route alternation

- This concept assumes that respite could be provided by alternating between the use of different departure routes
- The test has considered a range of different separations between routes to provide insight on how far apart the two alternating routes should be to provide benefit
- The test considered what type of respite could be provided if all departure routes from a single runway were alternated (i.e. *valued, noticeable* or *worth having*)



Respite Concept 2: Departure respite through route alternation



The test has indicated that:

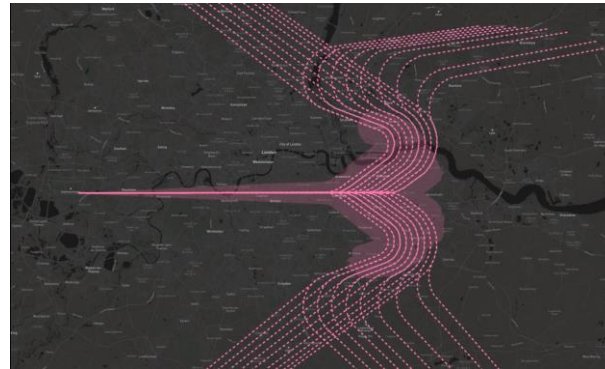
- **Route alternation has the potential to provide respite both within the LOAEL and beyond**
- The technique has limited impact around departure runway ends (since those very close to the runway will hear aircraft on both routes)
- Route separations of around 1nm have the potential to provide '*noticeable*' respite for some areas
- Route separations of around 3nm could provide large areas of '*valued*' respite
- The way in which the concept is applied alongside runway alternation will require careful consideration to maximise benefits
- Next steps will include considering the benefits of applying route alternation over different time periods (e.g. once per week, once per day, multiple times per day)

Respite Concept 3: Respite through alternation of vectored arrivals

- This concept explores whether respite can be provided by alternating the point at which vectored arrivals join final approach
- A number of vectored arrival options with varying joining points have been included in the airspace design options
- Testing of the concept has explored the potential for this concept to deliver respite for those overflowed by arrivals

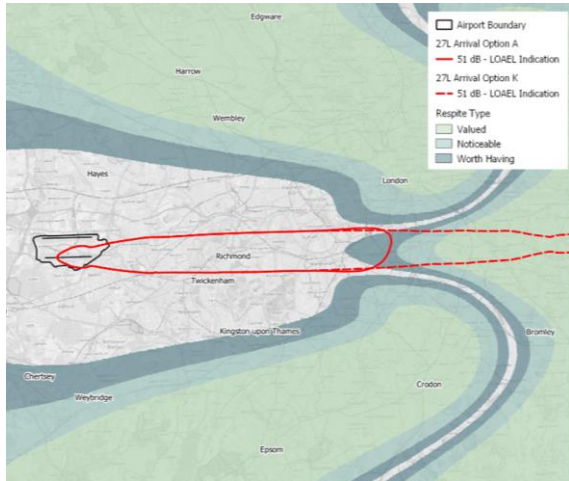


*Test1: Alternating from
8-12nm to 18-22nm*

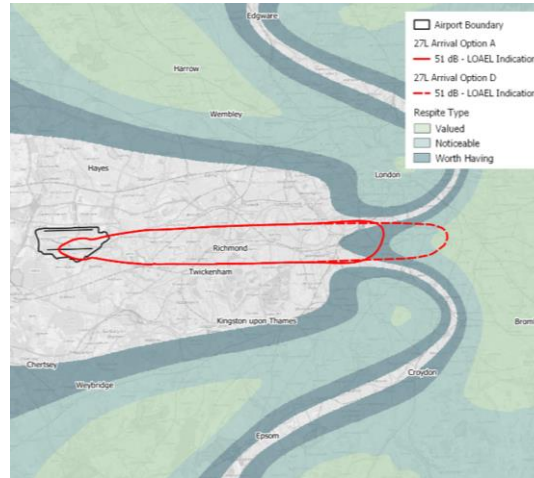


*Test2: Alternating from
8-12nm to 11-15nm*

Respite Concept 3: Respite through alternation of vectored arrivals



Test1: Alternating from
8-12nm to 18-22nm



Test2: Alternating from
8-12nm to 11-15nm

The test has indicated that:

- It is possible to provide respite within the LOAEL by varying the joining points for vectored arrivals
- The biggest respite benefits would occur further away from the airport
- Extending the joining point would have the effect of increasing the size of the LOAEL, increasing the number of people who experience *adverse effects*
- Next steps will include considering the benefits of applying alternation of vectored arrivals over different time periods (e.g. once per week, once per day, multiple times per day)

All three concepts have the potential to offer respite benefits to some overflown areas

For Arrivals:

- Varying the joining point for vectored arrivals could provide '*valued*' respite for areas further from the airport, but increase the number of people adversely effected close to the airport

For Departures:

- Even relatively small route separations (less than 1nm) could provide '*noticeable*' respite
- There may be some routes where '*valued*' respite could be provided if routes are kept sufficiently separated from each other

However, the benefits of providing respite through these concepts needs to be considered alongside:

- The impact the concept might have on total adverse effects
- The feasibility of making the operation predictable (given people benefit from knowing *when* to expect respite)
- Any carbon costs associated with the concept (we need to ensure these are not "disproportionate")
- The impact of overflying *more* people and newly overflown people (i.e. there is a *cost* of respite as well as a benefit)
- The operational viability of the concept

All respite concepts are being carried into Stage 3 of our ACP to be incorporated into our **system options** (arrivals and departures for easterly & westerly operations)

Respite Concepts: Next Steps for Heathrow

As the initial options are converted into system options at Stage 3, our next steps will include:

- Exploring the viability of delivering each of the concepts within an operational system
- Considering when concepts could be implemented (e.g. all day or during less busy periods only) and how they would work operationally (e.g. alternating between different routes or switching half-way through the day)
- Understanding where respite has benefits for currently overflowed communities, or is offered as a mitigation measure for newly overflowed communities
- Assessing the potential costs or negative impacts of any of the concepts
- Engaging and working with stakeholder representatives to understand the value of these, or other, potential concepts, prior to our public consultation at Stage 3

Heathrow
Making every journey better