



AIRSPACE MODERNISATION AIRSPACE CHANGE PROPOSAL

STAKEHOLDER ENGAGEMENT APPENDIX C

DPE CORRESPONDENCE & ENGAGEMENT MATERIAL





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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.

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Wed 01/03/2023 16:08

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

Bcc:

[Redacted content]



Dear All,

Heathrow are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you, as a stakeholder representative, on our progress. Since our last workshops, where we shared our "Comprehensive List of Options", we have reviewed the feedback received and we have undertaken an assessment of each of the options in a "Design Principle Evaluation".

We are now inviting you to attend an online session where we will share a summary of the feedback received and a summary of our Design Principle Evaluation. Please note that the list of flight path options remains subject to change and assessment at this stage is very high-level.

CAP1616 does not require ACP sponsors to engage at this stage so will not be asking for formal feedback. Therefore, whilst we welcome every stakeholder, we suggest that one representative per organisation is sufficient to attend this update.

If you are interested in attending, there are four sessions to choose from:

- Session 1: Monday 20 March (09:00 - 10:30 GMT), Microsoft Teams
- Session 2: Monday 20 March (16:00 - 17:30 GMT), Microsoft Teams
- Session 3: Monday 27 March (09:00 - 10:30 GMT), Microsoft Teams
- Session 4: Monday 27 March (16:00 - 17:30 GMT), Microsoft Teams

You can sign-up to a session via this survey: <https://forms.office.com/e/REg6attaxH>

We will send you an invitation (with a Teams link and joining instructions) to confirm your place at a workshop.

Kind regards,


Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Wed 01/03/2023 16:25

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

Bcc:

[Redacted content]

[REDACTED]

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

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If you are interested in attending, there are three sessions to choose from:

- Session 1: Wednesday 22 March (09:30 - 11:30), Microsoft Teams
- Session 2: Thursday 23 March (18:30 - 20:30), Microsoft Teams
- Session 3: Monday 27 March (13:30 - 15:30), Microsoft Teams

You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

Airspace & ATM Engagement Specialist

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Wed 01/03/2023 16:22

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

Bcc:

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

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Kind regards,

Airspace & ATM Engagement Specialist

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Wed 01/03/2023 16:28

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

Bcc:

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

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DD - Airspace <airspace@heathrow.com>

Wed 01/03/2023 16:30

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

Bcc:

[Redacted content]

Dear All,

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Kind regards,

[Redacted]

[Redacted]

Airspace & ATM Engagement Specialist

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Wed 01/03/2023 16:33

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

Bcc:

Dear All,

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Kind regards,

Airspace & ATM Engagement Specialist

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Wed 01/03/2023 16:39

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

Bcc:

[Redacted content]

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

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You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

[Redacted signature]

[Redacted signature]

Airspace & ATM Engagement Specialist

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Wed 01/03/2023 16:40

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

Bcc:

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

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You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

Airspace & ATM Engagement Specialist

From: [REDACTED]
Sent: 02 March 2023 09:30
To: DD - Airspace
Cc: [REDACTED]
Subject: Re: Invitation to update on Airspace Modernisation at Heathrow: March 2023

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

Dear [REDACTED]

I will be away for my daughter's wedding on all of the dates for the sessions below. However, [REDACTED] [REDACTED] the previous MRA representative on the HCNF (as it then was) has kindly agreed to be a replacement for me for the session on Monday 27th March. [REDACTED] is copied above. Please can you accept [REDACTED] registration for the session on the 27th March.

Kind regards,

[REDACTED] [REDACTED]

FW: Stage 2a industry feedback & inform session - option 1 of 4

DD - Airspace <airspace@heathrow.com>

Thu 02/03/2023 14:23

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

Bcc:

[Redacted]

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 1 taking place on Monday 20 March at 09:00 (GMT). Please click on the TEAMS link in the attached calendar invitation to join the call. We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[Redacted]

FW: Stage 2a industry feedback & inform session - option 2 of 4

DD - Airspace <airspace@heathrow.com>

Thu 02/03/2023 14:25

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

Bcc:

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 2 taking place on Monday 20 March at 16:00 (GMT). Please click on the TEAMS link in the attached calendar invitation to join the call. We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

FW: Stage 2a industry feedback & inform session - option 3 of 4

DD - Airspace <airspace@heathrow.com>

Thu 02/03/2023 14:29

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

Bcc:

[Redacted]

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 3 taking place on Monday 27 March at 09:00 (GMT). Please click on the TEAMS link in the attached calendar invitation to join the call. We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[Redacted]

From: DD - Airspace
Sent: 02 March 2023 16:39
To: DD - Airspace; [REDACTED]
Subject: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Dear [REDACTED]

Heathrow are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you, as a stakeholder representative, on our progress. Since our last workshops, where we shared our "Comprehensive List of Options", we have reviewed the feedback received and we have undertaken an assessment of each of the options in a "Design Principle Evaluation".

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- Session 4: Monday 27 March (16:00 - 17:30 GMT), Microsoft Teams

You can sign-up to a session via this survey: <https://forms.office.com/e/REg6attaxH>

We will send you an invitation (with a Teams link and joining instructions) to confirm your place at a workshop.

Kind regards,

[REDACTED] [REDACTED]

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Thu 02/03/2023 16:42

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

Bcc:

Dear All,

Heathrow are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you, as a stakeholder representative, on our progress. Since our last workshops, where we shared our "Comprehensive List of Options", we have reviewed the feedback received and we have undertaken an assessment of each of the options in a "Design Principle Evaluation".

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- Session 4: Monday 27 March (16:00 - 17:30 GMT), Microsoft Teams

You can sign-up to a session via this survey: <https://forms.office.com/e/REg6attaxH>

We will send you an invitation (with a Teams link and joining instructions) to confirm your place at a workshop.

Kind regards,

CUSTOMER COMPLAINT AND FEEDBACK FORM

CONTACT US

We love to hear from our customers. Please send your enquiry using the form below, include as much information as possible and one of our team will be in touch.

Alternatively you can contact us using [Web Chat](#).

If you have a membership with English Heritage your email will be dealt with as a priority by our dedicated membership team. Customers should expect to receive a response in 3 working days.

Please choose the topic you want to contact us about from the drop down box below. If the subject of your enquiry isn't listed, please select 'General Enquiry'.

What is your enquiry about?

PERSONAL DETAILS

Title *

Forename(s) *

Last Name *

Are you a Member?

If you are a Member, please enter your Membership Number

CONTACT DETAILS

Telephone*

Email *

ADDRESS

If you are a Member, then please enter your address below to enable us to process your enquiry quicker.

House Number/Building Name

Address Line 1

Address Line 2

Town/City

County/State

County/State

Postcode/Zipcode

Country

YOUR MESSAGE

Write your message here

To follow up my colleague [redacted] request October 2022, I am contacting you on behalf of Heathrow Airport. We are inviting stakeholders to an update session on Heathrow's airspace modernisation. We would like you to provide the opportunity for representatives from English Heritage to engage with us on our approach so we progress through the Civil Aviation Authority's airspace change process.

Upload any attachments here (2MB limit)

No file chosen



Contact Preferences

Your support is helping to keep the story of England alive at over 400 historic sites across the country. We'd love to keep in touch with you about things to see and do, exclusive offers, our latest work, appeals and how your support makes a difference. We will never share your details with anyone else to use for their purposes. You can change your mind at any time.

Please let us know how you would like to hear from us:

- Email Post Phone SMS

We respect your privacy and for full details see our [Privacy Policy](#).

County/State

Postcode/Zipcode

Country

YOUR MESSAGE

Write your message here

airspace change process:
Please could you provide contact details for a suitable member of your organisation to represent English Heritage at our upcoming engagement session. Alternatively, you can contact airspace@heathrow.com with any queries. Kind regards, [redacted] Heathrow Airspace Team.

Upload any attachments here (2MB limit)

No file chosen



Contact Preferences

Your support is helping to keep the story of England alive at over 400 historic sites across the country. We'd love to keep in touch with you about things to see and do, exclusive offers, our latest work, appeals and how your support makes a difference. We will never share your details with anyone else to use for their purposes. You can change your mind at any time.

Please let us know how you would like to hear from us:

- Email Post Phone SMS

We respect your privacy and for full details see our [Privacy Policy](#).

From:

Sent:

To:

Subject:

03 March 2023 08:37

DD - Airspace

RE: Stage 2a industry feedback & inform session - option 3 of 4

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

Hi [REDACTED]

Can I just check the time on this for the 27th. Is it definitely 09:00 GMT (10:00L) or should it be 09:00L? Just because the previous week prior to the clock change the equivalent session is set for 09:00GMT = 09:00 Local.

Let me know,
Thanks

[REDACTED]
Manager – Aeronautical Services and Air Traffic Management (ATM)
Virgin Atlantic

[REDACTED]
virgin atlantic 

From: DD - Airspace
Sent: 03 March 2023 11:16
To: [REDACTED]
Subject: RE: Stage 2a industry feedback & inform session - option 3 of 4

Good morning [REDACTED]

Thanks for bringing this to our attention, the session is planned for 09:00L – apologies for any confusion. I have now amended the wording on the form to reflect this and the calendar invite you have been sent will also reflect this.

Please let me know the time still suits you or if you'd like to attend another session?

Kind regards,

[REDACTED]

[REDACTED] [REDACTED]

Airspace & ATM Engagement Specialist

From:

Sent:

To:

Subject:

[REDACTED]
03 March 2023 12:38

DD - Airspace

RE: Stage 2a industry feedback & inform session - option 3 of 4

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

Hi [REDACTED]

09:00L 27th is fine for me, thanks.

[REDACTED]

Manager – Aeronautical Services and Air Traffic Management (ATM)

Virgin Atlantic

[REDACTED]

virgin atlantic 

From: DD - Airspace
Sent: 03 March 2023 11:28
To: [REDACTED]
Cc: DD - Airspace
Subject: RE: Stage 2a industry feedback & inform session - option 4 of 4

Dear [REDACTED]

Due to the upcoming clock change I would like to confirm that the Session on Mon 27th March in the invite below is scheduled to begin at 15:00Z/16:00L until 16:30Z/17:30L.

Hopefully, this does not cause any issues but please do let me know if you would prefer to attend another session.

Kind regards,
[REDACTED]

From: [REDACTED]
Sent: 03 March 2023 12:47
To: DD - Airspace
Subject: RE: Stage 2a industry feedback & inform session - option 4 of 4

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

Hello,

I was looking at that myself. Daylight savings does add a bit of muddle! I think we will still be good on our end for a 1100EST meeting on 27 MAR.

Very Respectfully,

[REDACTED] “ [REDACTED] [REDACTED] [REDACTED]

Airspace Tech Pilot

[REDACTED]

From: DD - Airspace
Sent: 03 March 2023 11:45
To: [REDACTED]
Subject: FW: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Dear [REDACTED]

I sent the email below to [REDACTED] [REDACTED] to invite [REDACTED] to Heathrow's next set of engagement sessions for our ACP as [REDACTED] was invited to our previous engagement workshops. [REDACTED] automated email response suggested I contact you as [REDACTED] has now changed role. Is there someone at Thurrock Council I can contact who would be interested in attending a session?

Kind regards,

[REDACTED]
Heathrow Airspace Team

From: DD - Airspace <airspace@heathrow.com>
Sent: Wednesday, March 1, 2023 4:26 PM
To: DD - Airspace <airspace@heathrow.com>
Subject: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

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You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDqLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

[REDACTED]

[REDACTED] [REDACTED]
Airspace & ATM Engagement Specialist

From: DD - Airspace
Sent: 03 March 2023 11:38
To: [REDACTED]
Subject: FW: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Dear [REDACTED]

I sent the email below to [REDACTED] [REDACTED] to invite [REDACTED] to Heathrow's next set of engagement sessions for our ACP as [REDACTED] was invited to our previous engagement workshops. [REDACTED] automated email response suggested I contact you as [REDACTED] has now changed role. Is there someone at City of London Corporation I can contact who would be interested in attending a session?

Kind regards,

[REDACTED]
Heathrow Airspace Team

From: DD - Airspace <airspace@heathrow.com>
Sent: Wednesday, March 1, 2023 4:26 PM
To: DD - Airspace <airspace@heathrow.com>
Subject: Invitation to update on Airspace Modernisation at Heathrow: March 2023

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Kind regards,

[REDACTED]

[REDACTED] [REDACTED]
Airspace & ATM Engagement Specialist

From: DD - Airspace
Sent: 03 March 2023 11:57
To: DD - Airspace; [REDACTED]
Subject: RE: Heathrow ACP Stage 2A Engagement: Online Workshop Confirmation

Dear [REDACTED]

I have been attempting to email you to invite you to one of our upcoming stakeholder sessions but have had trouble with your email address. Hopefully, using this email chain works and you receive my invitation.

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

We are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you, as a stakeholder representative, on our progress. Since our last workshops, where we shared our "Comprehensive List of Options", we have reviewed the feedback received and we have undertaken an assessment of each of the options in a "Design Principle Evaluation".

We are now inviting you to attend an online session where we will share a summary of the feedback received and a summary of our Design Principle Evaluation. Please note that the list of flight path options remains subject to change and assessment at this stage is very high-level.

If you are interested in attending, there are three sessions to choose from:

- Session 1: Wednesday 22 March (09:30 - 11:30), Microsoft Teams
- Session 2: Thursday 23 March (18:30 - 20:30), Microsoft Teams
- Session 3: Monday 27 March (13:30 - 15:30), Microsoft Teams

You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

[REDACTED]
Heathrow Airspace Team

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Fri 03/03/2023 12:01

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

Bcc: c

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

We are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you, as a stakeholder representative, on our progress. Since our last workshops, where we shared our "Comprehensive List of Options", we have reviewed the feedback received and we have undertaken an assessment of each of the options in a "Design Principle Evaluation".

We are now inviting you to attend an online session where we will share a summary of the feedback received and a summary of our Design Principle Evaluation. Please note that the list of flight path options remains subject to change and assessment at this stage is very high-level.

If you are interested in attending, there are three sessions to choose from:

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- Session 3: Monday 27 March (13:30 - 15:30), Microsoft Teams

You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

██████████
██████████
Airspace & ATM Engagement Specialist

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Fri 03/03/2023 13:17

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

Bcc: [REDACTED]

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

We are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you, as a stakeholder representative, on our progress. Since our last workshops, where we shared our "Comprehensive List of Options", we have reviewed the feedback received and we have undertaken an assessment of each of the options in a "Design Principle Evaluation".

We are now inviting you to attend an online session where we will share a summary of the feedback received and a summary of our Design Principle Evaluation. Please note that the list of flight path options remains subject to change and assessment at this stage is very high-level.

If you are interested in attending, there are three sessions to choose from:

- Session 1: Wednesday 22 March (09:30 - 11:30), Microsoft Teams
- Session 2: Thursday 23 March (18:30 - 20:30), Microsoft Teams
- Session 3: Monday 27 March (13:30 - 15:30), Microsoft Teams

You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

[REDACTED]

[REDACTED]

Airspace & ATM Engagement Specialist

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Fri 03/03/2023 13:20

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

Bcc: [REDACTED]

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

We are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you, as a stakeholder representative, on our progress. Since our last workshops, where we shared our "Comprehensive List of Options", we have reviewed the feedback received and we have undertaken an assessment of each of the options in a "Design Principle Evaluation".

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You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

[REDACTED]

[REDACTED] [REDACTED]

Airspace & ATM Engagement Specialist

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Fri 03/03/2023 13:23

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

Bcc: [REDACTED]
[REDACTED]
[REDACTED]

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

We are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you, as a stakeholder representative, on our progress. Since our last workshops, where we shared our "Comprehensive List of Options", we have reviewed the feedback received and we have undertaken an assessment of each of the options in a "Design Principle Evaluation".

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- Session 3: Monday 27 March (13:30 - 15:30), Microsoft Teams

You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,
[REDACTED]

[REDACTED] [REDACTED]

Airspace & ATM Engagement Specialist

Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Fri 03/03/2023 13:25

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

Bcc: [REDACTED]

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

We are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you, as a stakeholder representative, on our progress. Since our last workshops, where we shared our "Comprehensive List of Options", we have reviewed the feedback received and we have undertaken an assessment of each of the options in a "Design Principle Evaluation".

We are now inviting you to attend an online session where we will share a summary of the feedback received and a summary of our Design Principle Evaluation. Please note that the list of flight path options remains subject to change and assessment at this stage is very high-level.

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You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

[REDACTED]

[REDACTED] [REDACTED]

Airspace & ATM Engagement Specialist

FW: Stage 2a industry feedback & inform session - option 1 of 4

DD - Airspace <airspace@heathrow.com>

Fri 03/03/2023 15:01

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

Bcc: 

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 1 taking place on Monday 20 March at 09:00 (GMT). Please click on the TEAMS link in the attached calendar invitation to join the call. We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,



FW: Stage 2a industry feedback & inform session - option 2 of 4

DD - Airspace <airspace@heathrow.com>

Fri 03/03/2023 15:03

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

Bcc: [REDACTED]

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 2 taking place on Monday 20 March at 16:00 (GMT). Please click on the TEAMS link in the attached calendar invitation to join the call. We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From: DD - Airspace
Sent: 03 March 2023 15:07
To: [REDACTED]
Cc: DD - Airspace
Subject: FW: Stage 2a industry feedback & inform session - option 3 of 4
Attachments: Stage 2a industry feedback & inform session - option 3 of 4

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 3 taking place on Monday 27 March at 08:00Z/09:00L. Please click on the TEAMS link in the attached calendar invitation to join the call. We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

FW: Stage 2a industry feedback & inform session - option 4 of 4

DD - Airspace <airspace@heathrow.com>

Fri 03/03/2023 15:04

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

Bcc:

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 4 taking place on Monday 27 March at 15:00Z/16:00L. Please click on the TEAMS link in the attached calendar invitation to join the call. We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,


FW: Stage 2a industry feedback & inform session - option 4 of 4

DD - Airspace

Fri 03/03/2023 15:08

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

Bcc: 

 1 attachments (63 KB)

Stage 2a industry feedback & inform session - option 4 of 4;

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 4 taking place on Monday 27 March at 15:00Z/16:00L. Please click on the TEAMS link in the attached calendar invitation to join the call. We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,



Invitation to update on Airspace Modernisation at Heathrow: March 2023

DD - Airspace <airspace@heathrow.com>

Fri 03/03/2023 15:14

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

Bcc: [REDACTED]

Dear All,

You are likely aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

To make this change, we are going through the CAA's airspace change process, known as [CAP1616](#). The process places great importance on engaging with a wide range of stakeholders throughout the required stages, including potentially affected communities.

We are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you on our progress.

We are inviting you to attend an online session where we will share a summary of the feedback received following our last engagement workshops and a summary of our Design Principle Evaluation. Please note that the list of flight path options remains subject to change and assessment at this stage is very high-level.

If you are interested in attending, there are three sessions to choose from:

- Session 1: Wednesday 22 March (09:30 - 11:30), Microsoft Teams
- Session 2: Thursday 23 March (18:30 - 20:30), Microsoft Teams
- Session 3: Monday 27 March (13:30 - 15:30), Microsoft Teams

You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

[REDACTED]

[REDACTED]

Airspace & ATM Engagement Specialist

From: DD - Airspace
Sent: 03 March 2023 17:04
To: DD - Airspace
Cc: [REDACTED]
Subject: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Dear All,

You will be aware that Heathrow commenced a new Airspace Change Proposal (ACP) in 2021 to introduce airspace modernisation at Heathrow, in support of the Government's wider UK [Airspace Modernisation Strategy](#). More details on our ACP can be found on the Civil Aviation Authority's [airspace change portal](#).

We are now nearing completion of Step 2A of the CAA's airspace change process (CAP1616) and we would like to update you, as a stakeholder representative, on our progress. Since our last workshops, where we shared our "Comprehensive List of Options", we have reviewed the feedback received and we have undertaken an assessment of each of the options in a "Design Principle Evaluation".

We are now inviting you to attend an online session where we will share a summary of the feedback received and a summary of our Design Principle Evaluation. Please note that the list of flight path options remains subject to change and assessment at this stage is very high-level.

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You can sign-up to a session via this survey: <https://forms.office.com/e/3hFtfDgLy3>

We will send you an invitation (with Teams link and joining instructions) to confirm your place.

Kind regards,

[REDACTED]

[REDACTED]

Airspace & ATM Engagement Specialist

From: [REDACTED]
Sent: 05 March 2023 07:11
To: DD - Airspace
Subject: Airspace Modernisation update

You 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.

My PlaneHellAction email address is failing me presently and so I am using my personal one.

Dear [REDACTED]

I would like to join the Teams event on Mon 27 March, 1.30 - 3.30. And I would be glad of all meeting documents in good time before the meeting.

Many thanks and kind regards.

[REDACTED]

[REDACTED]

www.planehellaction.org.uk

FW: Stage 2a industry feedback & inform session - option 1 of 4

DD - Airspace <airspace@heathrow.com>

Mon 06/03/2023 16:14

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

Bcc:

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 1 taking place on Monday 20 March at 09:00 (GMT). Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

FW: Stage 2a industry feedback & inform session - option 2 of 4

DD - Airspace <airspace@heathrow.com>

Mon 06/03/2023 16:19

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

Bcc: [REDACTED]

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 2 taking place on Monday 20 March at 16:00 (GMT). Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From: DD - Airspace
Sent: 07 March 2023 09:28
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Good morning [REDACTED]

Thanks for your email.

I can confirm we have received [REDACTED] form with [REDACTED] preferred date and time for the update session.

Kind regards,

[REDACTED]

[REDACTED] [REDACTED]
Airspace & ATM Engagement Specialist

FW: Stage 2a industry feedback & inform session - option 3 of 4

DD - Airspace <airspace@heathrow.com>

Tue 07/03/2023 09:13

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

Bcc: [REDACTED]

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 3 taking place on Monday 27 March at 08:00Z/09:00L. Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From:

Sent:

To:

Subject:

[REDACTED]
07 March 2023 10:04

DD - Airspace

RE: Stage 2a industry feedback & inform session - option 3 of 4

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

Hi again [REDACTED]

Must be having a very slow day today!

I can't accept this meeting. When I open it up it seems to think that I'm the organiser so has greyed out the response options.

Cheers

[REDACTED]

From: DD - Airspace
Sent: 07 March 2023 16:19
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Stage 2a industry feedback & inform session - option 3 of 4

Hi [REDACTED]

Thanks for your email. You should be able to access the meeting on the day using this link: [Click here to join the meeting](#). To hold the time in your personal diary it might be worth creating a placeholder to remind you about the session. Hope this helps.

Best wishes,
[REDACTED]

FW: Stage 2a industry feedback & inform session - option 2 of 4

DD - Airspace <airspace@heathrow.com>

Tue 07/03/2023 16:39

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

Bcc: [REDACTED]

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 2 taking place on Monday 20 March at 16:00 (GMT). Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From: DD - Airspace
Sent: 07 March 2023 17:47
To: [REDACTED]
Cc: [REDACTED]
Subject: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Dear [REDACTED]

Thank you for responding to our invitation for our upcoming airspace modernisation update sessions taking place in March. [REDACTED] and [REDACTED] (cc'd) also signed up to a session. These sessions are targeted towards our community stakeholders including representatives from local authorities, environmental groups, and community/resident groups. Whilst you are welcome to join the community stakeholders, we wanted to make you aware that we are presenting the same material to our industry stakeholders (airlines, airports, NATS etc) where the discussion might be more technical and aligned to your interests. The industry sessions are taking place on Microsoft Teams on the following dates:

- Session 1: Monday 20 March (09:00 - 10:30 GMT)
- Session 2: Monday 20 March (16:00 - 17:30 GMT)
- Session 3: Monday 27 March (09:00 - 10:30 BST)
- Session 4: Monday 27 March (16:00 - 17:30 BST)

Please could you let us know whether the ACOG Team would prefer to attend an industry workshop and we will send you the joining details.

Kind regards,
[REDACTED]


FW: Stage 2a industry feedback & inform session - option 2 of 4

DD - Airspace <airspace@heathrow.com>

Thu 09/03/2023 16:54

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

Bcc: [REDACTED]

 1 attachments (61 KB)

Stage 2a industry feedback & inform session - option 2 of 4;

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 2 taking place on Monday 20 March at 16:00 (GMT). Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

FW: Stage 2a industry feedback & inform session - option 3 of 4

DD - Airspace <airspace@heathrow.com>

Thu 09/03/2023 16:54

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

Bcc: 

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 3 taking place on Monday 27 March at 08:00Z/09:00L. Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,


FW: Stage 2a industry feedback & inform session - option 4 of 4

DD - Airspace <airspace@heathrow.com>

Mon 13/03/2023 12:10

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

Bcc: [REDACTED]

 1 attachments (63 KB)

Stage 2a industry feedback & inform session - option 4 of 4;

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 4 taking place on Monday 27 March at 15:00Z/16:00L. Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From: [REDACTED]
Sent: 14 March 2023 14:39
To: DD - Airspace
Subject: Re: Invitation to update on Airspace Modernisation at Heathrow: March 2023

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

Dear [REDACTED]

Should we have received our invites? We have signed up but heard nothing.

Kind regards

[REDACTED] and [REDACTED]

From: DD - Airspace
Sent: 14 March 2023 14:50
To: [REDACTED]
Cc: DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Good afternoon [REDACTED] and [REDACTED]

I hope you are both well.

We will be sending out all session invites tomorrow.

Kind regards,

[REDACTED]

[REDACTED] [REDACTED]

Airspace & ATM Engagement Specialist

From:

[REDACTED]

Sent:

14 March 2023 14:55

To:

DD - Airspace

Subject:

Re: Invitation to update on Airspace Modernisation at Heathrow: March 2023

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

Thank you

[REDACTED]

From: DD - Airspace
Sent: 14 March 2023 15:40
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

Thank you for signing up to a Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place at the end of March. To help us manage session numbers, please can you let us know if you are happy to attend your second choice session instead, selected for Thursday 23rd March (18:30 – 20:30), instead of your first choice session?

Once confirmed, we will send the Microsoft Teams invitation to the session later this week.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 14 March 2023 15:42
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

Thank you for signing up to a Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place at the end of March. To help us manage session numbers, please can you let us know if you are happy to attend your second choice session, selected for Thursday 23rd March (18:30 – 20:30), instead of your first choice session?

Once confirmed, we will send the Microsoft Teams invitation to the session later this week.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 14 March 2023 15:42
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

Thank you for signing up to a Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place at the end of March. To help us manage session numbers, please can you let us know if you are happy to attend your second choice session, selected for Thursday 23rd March (18:30 – 20:30), instead of your first choice session?

Once confirmed, we will send the Microsoft Teams invitation to the session later this week.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 14 March 2023 15:44
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

Thank you for signing up to a Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place at the end of March. To help us manage session numbers, please can you let us know if you are happy to attend your second choice session, selected for Thursday 23rd March (18:30 – 20:30), instead of your first choice session?

Once confirmed, we will send the Microsoft Teams invitation to the session later this week.

Kind regards,
[REDACTED]

From:

[REDACTED]

Sent:

14 March 2023 18:29

To:

DD - Airspace

Subject:

Re: Invitation to update on Airspace Modernisation at Heathrow

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

Thank you I can attend on the 23rd

[REDACTED]

From:

[REDACTED]

Sent:

14 March 2023 19:30

To:

DD - Airspace

Subject:

Re: Invitation to update on Airspace Modernisation at Heathrow

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

This date would be possible too.

[REDACTED]

From: [REDACTED]

Sent: 15 March 2023 13:58

To: DD - Airspace

Cc: [REDACTED]

Subject: Invitation to update on Airspace Modernisation at Heathrow: March 2023 - [REDACTED]

You 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.

Good afternoon [REDACTED]

I hope this email finds you well.

[REDACTED] at Slough Borough Council, would like to accept your invitation to take part in your online event on Monday 27 March @ 13:30.

We have signed-up for this session via your Survey Link below and received confirmation advising we your invitation with TEAMS link and joining instructions would follow. At writing, we have not received the link, joining instructions or any confirmation that [REDACTED] registration has been accepted.

Could you advise if this is still taking place please, I look forward to hearing from you.

Kind Regards,

[REDACTED]

[REDACTED]

PA to: [REDACTED] - Executive Director Place & Communities and [REDACTED] - Executive Director Strategy

Slough Borough Council (SBC) Observatory House - 25 Windsor Road - SL1 2EL

Meeting Invitation to Heathrow's Airspace Modernisation Update Session

DD - Airspace <airspace@heathrow.com>

Wed 15/03/2023 15:39

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

Bcc:

[Redacted content]

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Wednesday 22 March at 09:30 - 11:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[Redacted signature]

Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

DD - Airspace <airspace@heathrow.com>

Wed 15/03/2023 15:40

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

Bcc:

[Redacted Bcc list]

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[Redacted signature]

From: DD - Airspace
Sent: 15 March 2023 15:41
To: [REDACTED] DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 15 March 2023 15:42
To: [REDACTED]; DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 15 March 2023 15:44
To: [REDACTED]; DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

Meeting Invitation to Heathrow's Airspace Modernisation Update Session

DD - Airspace <airspace@heathrow.com>

Wed 15/03/2023 15:47

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

Bcc:

[Redacted]

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Monday 27 March at 13:30 - 15:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[Redacted]

From: DD - Airspace
Sent: 15 March 2023 15:48
To: [REDACTED]; DD - Airspace
Cc: [REDACTED]
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow: March 2023 - [REDACTED]

Dear [REDACTED]

Thank you for your email. We are pleased that [REDACTED] has signed up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Monday 27 March at 13:30 - 15:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing [REDACTED] there. If you or [REDACTED] have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: [REDACTED]
Sent: 15 March 2023 16:03
To: DD - Airspace
Cc: [REDACTED]
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow: March 2023
[REDACTED] [REDACTED]

You 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]

Thank you for responding to my email and sending through the link, I'll add this to the diary for [REDACTED] to dial in on the day.

Kind Regards,

[REDACTED]

[REDACTED]
PA to: [REDACTED] - Executive Director Place & Communities and [REDACTED] - Executive Director Strategy

From: DD - Airspace
Sent: 15 March 2023 16:59
To: [REDACTED]
Subject: RE: Airspace Modernisation update

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Monday 27 March at 13:30 - 15:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. As these sessions are to update you on the feedback we received at Stage 2, and Heathrow's response, and to summarise our progress with the Design Principle Evaluation, no pre-reading is required. Once the sessions have concluded, we will email you with a copy of the engagement material. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 17 March 2023 10:34
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Monday 27 March at 13:30 - 15:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From: [REDACTED]
Sent: 17 March 2023 11:57
To: DD - Airspace
Cc: [REDACTED]
Subject: Re: Airspace Modernisation update

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

Dear [REDACTED]

Unexpectedly I find I will not be able to attend the session on Monday 27 March. Would it be possible to move my attendance to Thursday 23 March, 6.30-8.30pm.

My apologies.

[REDACTED]

From: DD - Airspace
Sent: 17 March 2023 12:09
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: [REDACTED]
Sent: 17 March 2023 12:13
To: DD - Airspace
Subject: Re: Invitation to update on Airspace Modernisation at Heathrow: March 2023

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

Dear [REDACTED]

Thank you for your email.

I have responded to the invitation form stating my first preference is Session 2 (Thursday 23 March 18.30). The acceptance could not be submitted without a second preference - however both of the other times clash with medical appointments which have been difficult to set up. In order to return the proforma I put 27 March as a second preference - the reality is that I certainly not be able to make all of this session. It would be very helpful therefore if you could confirm my place for Thursday 23rd.

Many thanks

[REDACTED]

FW: Stage 2a industry feedback & inform session - option 3 of 4

DD - Airspace <airspace@heathrow.com>

Fri 17/03/2023 13:43

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

Bcc: [REDACTED]

 1 attachments (63 KB)

Stage 2a industry feedback & inform session - option 3 of 4;

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 3 taking place on Monday 27 March at 08:00Z/09:00L. Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From: DD - Airspace
Sent: 17 March 2023 13:46
To: [REDACTED]; DD - Airspace
Cc: [REDACTED]
Subject: RE: Airspace Modernisation update

Dear [REDACTED]

Thank you for letting us know in advance. You are welcome to join the meeting on Thursday 23 March at 18:30 - 20:30 instead. Please use the TEAMS link below to join the call.

[Click here to join the meeting](#)

If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 17 March 2023 13:51
To: [REDACTED]
Cc: DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Dear [REDACTED]

We have extended the meeting time with TAG (and observers) on Tuesday 21st for the purpose of also taking you through the same engagement material we plan to present at the at these Update sessions. We are hoping this will provide you with an opportunity to discuss and ask questions about the material with the technical team. You are still welcome to join us for Session 2 on Thursday 23rd, however it will be the same material.

Please let me know if you'd still like to join and I can send you the Teams link.

Kind regards,

[REDACTED]

[REDACTED] [REDACTED]

Airspace & ATM Engagement Specialist

From: [REDACTED]
Sent: 17 March 2023 14:31
To: DD - Airspace
Cc: [REDACTED]
Subject: Re: Airspace Modernisation update

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

Dear [REDACTED]

Do I need to click on the link now in order for it not to disappear? Or do I click on the link just before the meeting - as I have done with any DD - Airspace meeting?

Thank you for your advice. And thank you, too, for confirming my place on the 23 March meeting.

All good wishes

[REDACTED]

From: DD - Airspace
Sent: 17 March 2023 16:18
To: [REDACTED]; DD - Airspace
Cc: [REDACTED]
Subject: RE: Airspace Modernisation update

Dear [REDACTED]

You can click on the link we sent for the Thursday session just before the meeting and it should let you into the lobby, please let me know if you experience any issues with this on the day.

We look forward to seeing you at the session next Thursday.

Kind regards,

[REDACTED]

[REDACTED]
Airspace & ATM Engagement Specialist

From: DD - Airspace
Sent: 17 March 2023 17:40
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Monday 27 March at 13:30 - 15:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 17 March 2023 17:42
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear [REDACTED]

[REDACTED] has signed up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please could you ensure that [REDACTED] has access to the TEAMS link below to click on at the time of the meeting to join the call.

[Click here to join the meeting](#)

We look forward to seeing her there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From:

[REDACTED]
17 March 2023 19:55

Sent:

To:

DD - Airspace

Subject:

Re: Airspace Modernisation update

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

Thank you so much. [REDACTED]

From: [REDACTED]
Sent: 19 March 2023 11:25
To: DD - Airspace
Subject: Re: Invitation to update on Airspace Modernisation at Heathrow: March 2023

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

Once again many thanks for your email [REDACTED]

Please book me in for the Thursday session - I appreciate there will be an overlap with Tuesday's session but it will be worthwhile to hear the views of other stakeholders.

Kind regards

[REDACTED]

From: [REDACTED]

Sent:

20 March 2023 08:47

To:

DD - Airspace

Cc: [REDACTED]

Subject:

RE: Invitation to update on Airspace Modernisation at Heathrow: March 2023

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

Hi [REDACTED]

Thanks for the clarification. Could I attend session 3 please?

[REDACTED]
The logo for ACOG, consisting of the letters 'ACOG' in a bold, dark blue, sans-serif font. The 'A' and 'C' are connected, and the 'O' is a solid circle. The 'G' has a stylized, curved tail.

[REDACTED]
ATC Technical Consultant

From: [REDACTED]
Sent: 20 March 2023 08:49
To: DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow

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

Yes, I can attend the session on 23 March 18:30-20:30 so please do send me a Teams invite.

Best wishes

[REDACTED]

[REDACTED]
Spatial Planning and Policy Manager
Infrastructure, Planning and Major Projects

Surrey County Council Contact Centre: [REDACTED] • [surreycc.gov.uk](https://www.surreycc.gov.uk)

From:

Sent:

To:

Subject:

[REDACTED]
20 March 2023 09:16

DD - Airspace

RE: Invitation to update on Airspace Modernisation at Heathrow: March 2023

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

Hi [REDACTED]

Sorry, just realised I hadn't got back to you.

I won't be able to make these sessions but I'm sure [REDACTED] will give the team an update.

Hope they go well.

Thanks

[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 09:25
To: [REDACTED]; DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow

Hi [REDACTED]

Thank you for confirming your availability for Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 09:27
To: [REDACTED]; DD - Airspace
Cc: [REDACTED]
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow: March 2023
Attachments: Stage 2a industry feedback & inform session - option 3 of 4

Hi [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE industry update session 3 taking place on Monday 27 March at 08:00Z/09:00L. Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

Step 2A Engagement on Design Principle Evaluation – Industry stakeholder representatives

Session 1: Monday 20 March, 09:00 – 10:30, Online, Microsoft Teams

Name	Organisation
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Farnborough Airport
[REDACTED]	Gatwick Airport
[REDACTED]	Blackbushe Airport Ltd
[REDACTED]	Future Aviation Industry Working Group on Airspace Integration (FAIWG-AI)
[REDACTED]	Ministry of Defence - Defence Airspace and Air Traffic Management (MoD DAATM)

Step 2A Engagement on Design Principle Evaluation – Industry stakeholder representatives

Session 2: Monday 20 March, 16:00 – 17:30, Online, Microsoft Teams

Name	Organisation
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Stansted Airport

From: DD - Airspace
Sent: 20 March 2023 10:26
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Monday 27 March at 13:30 - 15:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 10:44
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

We are sorry that you were not able to attend our update on Airspace Modernisation Stage 2 Feedback and DPE session this morning.

Please could you let me know if you would like to attend your second preference session selected for Monday 27 March (08:00Z/09:00L - 09:30Z/10:30L) and I will send you the Teams invitation.

Many thanks,
[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 10:48
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

We are sorry that you were not able to attend our update on Airspace Modernisation Stage 2 Feedback and DPE session this morning. Please could you let me know whether you would like to attend another workshop? As a reminder, the list of remaining workshop dates and times are as follows:

Monday 20 March 16:00-17:30 (online)
Monday 27 March 08:00Z/09:00L – 09:30Z/10:30L (online)
Monday 27 March 15:00Z/16:00L – 16:30Z/1730L (online)

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 11:10
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

I am following up on the invitation to Heathrow's update on Airspace Modernisation Stage 2 Feedback and DPE session. The sessions have now commenced, where we are sharing with stakeholders a summary of the feedback received at Step 2A and a summary of our Design Principle Evaluation (DPE). As a reminder, the list of remaining session dates and times are as follows:

Monday 20 March 16:00-17:30 (online)
Monday 27 March 08:00Z/09:00L – 09:30Z/10:30L (online)
Monday 27 March 15:00Z/16:00L – 16:30Z/1730L (online)

Please could you let me know if you would like to attend a session and I will send you an invitation.

Many thanks,
[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 14:24
To: [REDACTED]; DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Hi [REDACTED]

That's no problem, thank you for letting us know in advance.

Best wishes,

[REDACTED]
Heathrow Airspace Team

From: DD - Airspace
Sent: 20 March 2023 14:28
To: [REDACTED]; DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow: March 2023

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: [REDACTED]
Sent: 20 March 2023 15:14
To: DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow

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

Hello [REDACTED]

Many thanks for reaching out, I am really sorry I missed the teams invite meeting that was attached to the response email and therefore it was not in my calendar.

Yes, please can I attend my second preference meeting for Monday 27th March?

Kind regards



London Luton Airport

From: DD - Airspace
Sent: 20 March 2023 15:31
To: [REDACTED]; DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow
Attachments: Stage 2a industry feedback & inform session - option 3 of 4

Hi [REDACTED]

That's no problem! Please find attached the invitation for Session 3 taking place on Monday 27 March at 08:00Z/09:00L. Alternatively, you can click on the TEAMSs link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you next week. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 16:59
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

We are sorry that you were not able to attend Heathrow's update on Airspace Modernisation Stage 2 Feedback and DPE session this afternoon. Please could you let me know whether you would like to attend another session and I will send an invitation. As a reminder, the list of remaining session dates and times are as follows:

Monday 27 March 08:00Z/09:00L – 09:30Z/10:30L (online)

Monday 27 March 15:00Z/16:00L – 16:30Z/1730L (online)

Kind regards,

[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 17:01
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

We are sorry that you were not able to attend Heathrow's update on Airspace Modernisation Stage 2 Feedback and DPE session this afternoon. Please could you let me know whether you would like to attend another session and I will send an invitation. As a reminder, the list of remaining session dates and times are as follows:

Monday 27 March 08:00Z/09:00L – 09:30Z/10:30L (online)

Monday 27 March 15:00Z/16:00L – 16:30Z/1730L (online)

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 17:01
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

We are sorry that you were not able to attend Heathrow's update on Airspace Modernisation Stage 2 Feedback and DPE session this afternoon. Please could you let me know whether you would like to attend another session and I will send an invitation. As a reminder, the list of remaining session dates and times are as follows:

Monday 27 March 08:00Z/09:00L – 09:30Z/10:30L (online)

Monday 27 March 15:00Z/16:00L – 16:30Z/1730L (online)

Kind regards,

[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 17:02
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

We are sorry that you were not able to attend Heathrow's update on Airspace Modernisation Stage 2 Feedback and DPE session this afternoon. Please could you let me know whether you would like to attend another session and I will send an invitation. As a reminder, the list of remaining session dates and times are as follows:

Monday 27 March 08:00Z/09:00L – 09:30Z/10:30L (online)

Monday 27 March 15:00Z/16:00L – 16:30Z/1730L (online)

Kind regards,
[REDACTED]

From: [REDACTED]
Sent: 20 March 2023 17:06
To: DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow

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

Monday, March 27 1500 – 1630Z please.

Thank you very much!

Best Regards,

[REDACTED]
Air Traffic Management (ATM) and Airfield Operations Manager
Europe, North Atlantic, Asia-Pacific, Middle East and Western US.
4000 E. Sky Harbor Blvd. Phoenix, AZ 85034
[REDACTED]
[REDACTED]

From: DD - Airspace
Sent: 20 March 2023 17:27
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Monday 27 March at 13:30 - 15:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 21 March 2023 09:22
To: [REDACTED]; DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow
Attachments: Stage 2a industry feedback & inform session - option 4 of 4

Dear [REDACTED]

Thank you for your response. Please find attached the invitation to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 4 taking place on Monday 27 March at 15:00Z/16:00L. Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 21 March 2023 09:50
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: [REDACTED]
Sent: 21 March 2023 10:13
To: DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow

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

Hello [REDACTED]

Thank you for the email. Can you please send an invite for the session on Monday afternoon.

Thanks,
[REDACTED]

From: DD - Airspace
Sent: 21 March 2023 10:25
To: [REDACTED] DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow
Attachments: Stage 2a industry feedback & inform session - option 4 of 4

Dear [REDACTED]

Thank you for your response. Please find attached the invitation to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 4 taking place on Monday 27 March at 15:00Z/16:00L. Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

Heathrow Update Session 22 March Reminder

DD - Airspace <airspace@heathrow.com>

Tue 21/03/2023 10:15

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

Bcc:

Dear Stakeholder,

We are looking forward to meeting you virtually tomorrow morning (Weds 22nd March) for Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place at 09:30 - 11:30. As a reminder, I have included again the TEAMS link below for you to click on to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

From: DD - Airspace
Sent: 21 March 2023 17:49
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From: [REDACTED]
Sent: 22 March 2023 08:54
To: DD - Airspace
Subject: RE: Heathrow Update Session 22 March Reminder

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

Morning [REDACTED]

Apologies, a conflicting appointment has arisen for myself, [REDACTED] [REDACTED] and [REDACTED] [REDACTED] so we are unable to attend this mornings meeting. Will the meeting be recorded?

Thanks

[REDACTED]

[REDACTED]
Environmental Protection & Housing Regulation Manager
Environment and Public Protection
Bromley Council, Civic Centre, Stockwell Close, Bromley, BR1 3UH

[REDACTED]
[REDACTED]
www.bromley.gov.uk

From: [REDACTED]
Sent: 22 March 2023 09:05
To: DD - Airspace
Cc: [REDACTED]
Subject: Heathrow Update Session this morning - Question

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

Dear [REDACTED],

please note that FRP will be asking the following question(s) this morning.

Best regards,

[REDACTED]

FRP

If not already covered in this workshop, please inform us:

- a) How many options does the DPE cover? E.g. 313 + vector arrivals = 317? Can you, for clarity and the avoidance of doubt, provide a list of those options now?
- b) Are any of the DPs split into 'sub-DPs' for evaluation purposes? Which DPs, into what sub-DPs?
- c) What are the criteria used, for each DP/sub-DP, to decide whether each option is 'Met, Partially Met, or Not Met' for that DP/sub-DP?
- d) Are Heathrow using numerical scoring instead of M/PM/NM in this DPE?
- e) How are these M/PM/NM results (or scores) for each DP/sub-DP added up to get an overall DPE conclusion (or score) for each option? Are they weighted in this adding-up?
- f) What is the outcome M/PM/NM result (or score) for each of the [317] options?

From: DD - Airspace
Sent: 22 March 2023 12:39
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Monday 27 March at 13:30 - 15:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From: DD - Airspace
Sent: 22 March 2023 12:39
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Thursday 23 March at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From: DD - Airspace
Sent: 22 March 2023 12:46
To: [REDACTED]
Cc: DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

Thanks again for signing up to attend Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session. If you would like to attend your **first choice session taking place on Monday 27th March at 13:30 to 15:30**, please click on the following TEAMS link to join the call: [Click here to join the meeting](#).

If you would prefer to attend your **second choice session with fewer attendees taking place tomorrow, Thursday 23rd March at 18:30 – 20:30**, please click on the following TEAMS link to join the call: [Click here to join the meeting](#).

We look forward to seeing you at one of the sessions. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

Step 2A Engagement on Design Principle Evaluation – Community stakeholder representatives

Session 1: Wednesday 22 March, 09:30 – 11:30, Online, Microsoft Teams

Name	Organisation
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow (Headland)
[REDACTED]	Heathrow (Headland)
[REDACTED]	National Trust
[REDACTED]	Chilterns Conservation Board
[REDACTED]	Airspace Change Organising Group (ACOG)
[REDACTED]	CPRE Oxfordshire
[REDACTED]	Friends of Richmond Park
[REDACTED]	Sevenoaks District Council
[REDACTED]	Chiltern Society
[REDACTED]	Bromley Council
[REDACTED]	Local Authorities Aircraft Noise Council (LAANC) / Richmond and Wandsworth Council
[REDACTED]	London Borough of Southwark
[REDACTED]	Local Resident, Walton-on-Thames, Surrey
[REDACTED]	Local Resident, Walton-on-Thames, Surrey
[REDACTED]	London Borough of Ealing / Heathrow Strategic Planning Group (HSPG)

From: DD - Airspace
Sent: 22 March 2023 12:48
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

We are sorry that you were not able to attend Heathrow's update on Airspace Modernisation Stage 2 Feedback and DPE session this morning. Please could you let me know whether you would like to attend another session and I will send an invitation. As a reminder, the list of remaining session dates and times are as follows:

Thursday 23rd March 18:30 – 20:30 (online)
Monday 27 March 13:30 - 15:30 (online)

Kind regards,

[REDACTED]

From: DD - Airspace
Sent: 22 March 2023 12:51
To: [REDACTED]
Cc: DD - Airspace
Subject: Invitation to update on Airspace Modernisation at Heathrow

Dear [REDACTED]

We are sorry that you were not able to attend Heathrow's update on Airspace Modernisation Stage 2 Feedback and DPE session this morning. Please could you let me know whether you would like to attend another session and I will send an invitation. As a reminder, the list of remaining session dates and times are as follows:

Thursday 23rd March 18:30 – 20:30 (online)
Monday 27 March 13:30 - 15:30 (online)

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 22 March 2023 12:57
To: [REDACTED]; DD - Airspace
Cc: [REDACTED]
Subject: RE: Heathrow Update Session 22 March Reminder

Dear [REDACTED]

Thank you for letting us know in advance of this morning's session. The meeting is not recorded but we will be circulating the engagement material to you next week following the final session.

Please let me know if you, [REDACTED] or [REDACTED] would like to attend another session and I will send an invitation. The list of remaining session dates and times are as follows:

Thursday 23rd March 18:30 – 20:30 (online)
Monday 27 March 13:30 - 15:30 (online)

Kind regards,
[REDACTED]

From: DD - Airspace <airspace@heathrow.com>
Sent: 22 March 2023 13:14
To: [REDACTED]
Subject: DPE Engagement

Dear [REDACTED]

Thanks for attending this morning's session – we appreciated your engagement and your feedback. I think we answered all of your questions, but please do let us know if you would like further clarification on anything.

One thing we want to highlight before you receive the material is that there is no overall RAG result assigned to each option. We have assessed each option against each design principle, and allocated a RAG status (“met”, “partially met” or “not met”) for each DP, but we have not applied any weighting or prioritisation of principles to identify an overall result for each option. In effect, each option would show as “partially met” (or amber) if we had assigned an overall result. As we discussed this morning (and last week), we have not chosen to discount any options based on the DPE results alone, so it was not necessary to apply an overall result for each option.

Happy to discuss if you have any further questions once you have reviewed the material. The engagement pack will be issued to all stakeholders next week.

Many thanks,

[REDACTED]

From: Lisa Forshew (Supplier)
Sent: 23 March 2023 10:51
To: [REDACTED]
Cc: DD - Airspace
Subject: Extensions to AONBs

Hi [REDACTED]

Thank you for joining our Airspace Modernisation update yesterday. We appreciated your time and your feedback. Thanks also for mentioning the planned extensions to both the Chilterns and Surrey Hills AONBs. We were aware of proposals to extend the Chilterns (but not which area this would cover) and we were not aware of the Surrey Hills proposals. Might it be possible for you to share some information on these proposals with us? Or we could set up a 30 minute call to discuss with you if that suits?

Many thanks,

[REDACTED]

From: [REDACTED]
Sent: 23 March 2023 14:52
To: [REDACTED]
Cc: DD - Airspace; [REDACTED]
Subject: RE: Extensions to AONBs

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

Dear [REDACTED]

Thank you for engaging with the Chilterns Conservation Board on the Heathrow Airspace Modernisation programme.

Natural England are leading on the extensions to both the Chilterns and Surrey Hill AONBs.

CCB is now 'just' a stakeholder in the process for the Chilterns AONB. All the current material on the project is, however, available through our website, here: <https://www.chilternsaonb.org/what-we-do/future-proofing-the-chilterns/chilterns-aonb-boundary-review/>. The Board's position is that the AONB should be extended to cover more of the Chilterns chalk landscape than is currently designated – from our perspective that would include more land extending into the Thames Valley, including across the river into parts of Berkshire, more of south Buckinghamshire and south-west Herts – all of which could bring the boundary physically closer to Heathrow. But it's not our decision, of course!

With regard to the tension expressed (frequently!) in the briefings between maintaining tranquillity in the countryside and minimising the numbers of people impacted by avoiding urban areas, my view is that there's a relationship between the design principles for the Airspace Modernisation seeking to avoid areas that might have been designated for their tranquillity, including AONBs etc., *where possible*, and the designation of AONBs taking account of the tranquillity an area in the assessment of 'natural beauty' but the designation not being dependent upon complete tranquillity. In that respect I think there's potential for working together (and with the other airspace users that affect us, including Northolt and Luton) to ensure that we can identify, strategically, the areas in which tranquillity can best be prioritised (either because there is no planned overflying or aircraft are operating at a sufficient height to not be perceived as a problem). We wouldn't want to be in a position where the conservation and enhancement of natural and cultural heritage characteristics on the ground through AONB designation was necessarily seen as incompatible with an element of overflying. I should emphasise that this is an officer view and not necessarily the formal position of the Chilterns Conservation Board.

We have been engaging with NE, and their consultants (LUC), on the definition of an 'area of search' for the detailed assessment phase of the AONB Extension project. That area of search has now been agreed, but is not yet in the public domain. We don't have the authority to share it yet, so you'd need to speak to NE. I've cc'd the generic project email address in on this response (which is our normal procedure to ensure NE are aware of stakeholder conversations). The project is being managed by NE's Thames and Solent region (but the Chilterns extends into their West Anglia region too).

NE's Thames and Solent region also covers the Surrey Hills project, which is more advanced than our own. Information about their project can be seen here - <https://www.surrey-hills-aonb-boundary-review.org/discover> – and that page includes their current area of search.

From: DD - Airspace
Sent: 23 March 2023 13:20
To: [REDACTED]; DD - Airspace
Subject: RE: Invitation to update on Airspace Modernisation at Heathrow
Attachments: Stage 2a industry feedback & inform session - option 4 of 4

Dear [REDACTED]

Thank you for your response. Please find attached the invitation to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 4 taking place on Monday 27 March at 15:00Z/16:00L. Please click on the TEAMS link in the attached calendar invitation or below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

From:

[Redacted]

Sent:

23 March 2023 13:21

To:

DD - Airspace

Subject:

RE: Invitation to update on Airspace Modernisation at Heathrow

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

Thanks,

[Redacted]

American Airlines 

[Redacted]

American Airlines

Technical Pilot

Airspace/Aircraft Modernization

[Redacted] ©

[Redacted]



Heathrow Update Session 23 March Reminder

DD - Airspace <airspace@heathrow.com>

Thu 23/03/2023 13:30

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

Bcc:

Dear Stakeholder,

We are looking forward to meeting you virtually this evening (23rd March) for Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place at 18:30 - 20:30. As a reminder, I have included again the TEAMS link below for you to click on to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

Meeting Invitation to Heathrow's Airspace Modernisation Update Session

DD - Airspace <airspace@heathrow.com>

Thu 23/03/2023 13:36

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

Bcc:

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place this evening (Thursday 23 March) at 18:30 - 20:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

Step 2A Engagement on Design Principle Evaluation – Community stakeholder representatives

Session 2: Thursday 23 March, 18:30 – 20:30, Online, Microsoft Teams

Name	Organisation
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow (Headland)
[REDACTED]	Heathrow (Headland)
[REDACTED]	Hounslow Borough Friends of the Earth
[REDACTED]	Friends of Richmond Park
[REDACTED]	Richmond Heathrow Campaign
[REDACTED]	The Windlesham Society
[REDACTED]	Communities Against Gatwick Noise Emissions (CAGNE)
[REDACTED]	Royal Borough of Windsor and Maidenhead Council (RBWM)
[REDACTED]	Chilterns Conservation Board
[REDACTED]	Surrey County Council
[REDACTED]	Englefield Green Action Group (EGAG)
[REDACTED]	Plane Hell Action
[REDACTED]	Teddington Action Group (TAG)
[REDACTED]	Harmondsworth and Sipson Residents Association (HASRA)
[REDACTED]	Westbourne Park Road East Resident's Association (WPRERA)
[REDACTED]	Teddington Action Group (TAG)
[REDACTED]	Environment Agency
[REDACTED]	Watford Borough Council
[REDACTED]	Noise and Airspace Community Forum (NACF), Independent Chair

From: DD - Airspace
Sent: 24 March 2023 09:41
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear Stakeholder,

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Monday 27 March at 13:30 - 15:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

[REDACTED]

From: DD - Airspace
Sent: 24 March 2023 10:57
To: [REDACTED]
Cc: DD - Airspace
Subject: Meeting Invitation to Heathrow's Airspace Modernisation Update Session

Dear [REDACTED]

Thank you for signing up to Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place on Monday 27 March at 13:30 - 15:30. Please click on the TEAMS link below to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,
[REDACTED]

Heathrow Update Session Mon 27 March Reminder

DD - Airspace <airspace@heathrow.com>

Fri 24/03/2023 15:12

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

Bcc:

Dear Stakeholder,

We are looking forward to meeting you virtually on Monday 27 March for Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 3 taking place at 08:00Z/09:00L – 09:30Z/10:30L. As a reminder, I have included again the TEAMS link in the attached calendar invite and below for you to click on to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

Step 2A Engagement on Design Principle Evaluation – Industry stakeholder representatives

Session 3: Monday 27 March, 09:00 – 10:30, Online, Microsoft Teams

Name	Organisation
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	NATS (NERL)
[REDACTED]	NATS
[REDACTED]	NATS
[REDACTED]	RAF Northolt
[REDACTED]	RAF Northolt
[REDACTED]	Virgin Atlantic
[REDACTED]	Lufthansa Group (Swiss)
[REDACTED]	British Airways
[REDACTED]	Airspace Change Organising Group (ACOG)
[REDACTED]	Luton Airport

Heathrow Update Session Mon 27 March Reminder

DD - Airspace <airspace@heathrow.com>

Mon 27/03/2023 10:08

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

Bcc:

 1 attachments (56 KB)

Stage 2a industry feedback & inform session - option 4 of 4;

Dear Stakeholder,

We are looking forward to meeting you virtually today (Monday 27 March) for Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session 4 taking place at 15:00Z/16:00L – 16:30Z/17:30L. As a reminder, I have included again the TEAMS link in the attached calendar invite and below for you to click on to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,


Heathrow Update Session Mon 27 March Reminder

DD - Airspace <airspace@heathrow.com>

Mon 27/03/2023 10:11

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

Bcc:

Dear Stakeholder,

We are looking forward to meeting you virtually this afternoon (27th March) for Heathrow's Airspace Modernisation Stage 2 Feedback and DPE update session taking place at 13:30 - 15:30. As a reminder, I have included again the TEAMS link below for you to click on to join the call.

[Click here to join the meeting](#)

We look forward to seeing you there. If you have any questions, please feel free to email airspace@heathrow.com.

Kind regards,

Step 2A Engagement on Design Principle Evaluation – Community stakeholder representatives

Session 3: Monday 27 March, 13:30 – 15:30, Online, Microsoft Teams

Name	Organisation
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow (Headland)
[REDACTED]	Heathrow (Headland)
[REDACTED]	Buckinghamshire Council
[REDACTED]	Mole Valley District Council
[REDACTED]	Englefield Green Action Group (EGAG)
[REDACTED]	Spelthorne Borough Council
[REDACTED]	Forest Hill Society
[REDACTED]	Heathrow Association for the Control of Aircraft Noise (HACAN)
[REDACTED]	Molesey Residents Association
[REDACTED]	Environment Agency
[REDACTED]	Hammersmith and Fulham Council
[REDACTED]	The Royal Parks
[REDACTED]	Surrey County Council
[REDACTED]	Friends of Richmond Park
[REDACTED]	Reigate and Banstead Borough Council
[REDACTED]	Slough Borough Council
[REDACTED]	The Holly Lodge Centre
[REDACTED]	Westbourne Park Road East Resident's Association (WPRERA)
[REDACTED]	London Borough of Bexley
[REDACTED]	London Borough of Hackney
[REDACTED]	The Royal Parks
[REDACTED]	Chiltern Society
[REDACTED]	Environment Agency
[REDACTED]	Friends of Richmond Park

Step 2A Engagement on Design Principle Evaluation – Industry stakeholder representatives

Session 4: Monday 27 March, 16:00 – 17:30, Online, Microsoft Teams

Name	Organisation
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Heathrow
[REDACTED]	Delta
[REDACTED]	British Airways
[REDACTED]	British Airways
[REDACTED]	American Airlines
[REDACTED]	American Airlines
[REDACTED]	Southend Airport
[REDACTED]	British Airlines Pilots Association (BALPA)

From: [REDACTED]
Sent: 29 March 2023 10:40
To: DD - Airspace
Subject: RE: Heathrow Update Session Mon 27 March Reminder

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

Hello,

Will a copy of the presentation and full slidedeck be made available to attendees?

Thanks,

[REDACTED]

Heathrow Stage 2 Feedback and DPE Update Session Material

DD - Airspace <airspace@heathrow.com>

Wed 29/03/2023 16:50

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

Bcc:

[Redacted content]

 2 attachments (13 MB)

Summary of Step 2A Feedback & DPE_vF.pdf; Summary of Step 2A Feedback & DPE_vF_Appendix.pdf;

Dear Sir/Madam,

Thank you to those of you who attended one of our recent Stage 2 Feedback and DPE update sessions. We very much appreciate the time that you gave for this engagement. As promised in the sessions, we have now attached the engagement material including:

- The slide pack presented in the sessions, including:
 - A Glossary of Terms
 - A full list of all stakeholders engaged at Stage 2
 - The DPE Methodology
- A Technical Appendix with maps of all options and summary tables showing the results of the Design Principle Evaluation

We are open to receiving any comments or questions on our approach to the DPE or on the DPE outputs. Please note that there will be ample opportunity to discuss and feedback on the specific geographical areas or potential impact of the flight path options during Stage 3.

If you have any questions or feedback on anything within the material, or difficulty in accessing the materials, please email us at: airspace@heathrow.com.

We will be in touch soon to provide you with an update on our progress with our ACP prior to our Stage 2 submission this summer.

Many thanks for your support in this engagement.

Kind regards,


Heathrow Stage 2 Feedback and DPE Update Session Material


DD - Airspace <airspace@heathrow.com>

Wed 29/03/2023 16:51

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

Bcc:

[REDACTED]

 2 attachments (13 MB)

Summary of Step 2A Feedback & DPE_vF.pdf; Summary of Step 2A Feedback & DPE_vF_Appendix.pdf;

Dear Sir/Madam,

We recently concluded our Stage 2 Feedback and DPE update sessions with community and industry stakeholder groups. We have attached the engagement material including:

- The slide pack presented in the sessions, including:
 - A Glossary of Terms
 - A full list of all stakeholders engaged at Stage 2
 - The DPE Methodology

- A Technical Appendix with maps of all options and summary tables showing the results of the Design Principle Evaluation

We are open to receiving any comments or questions on our approach to the DPE or on the DPE outputs. Please note that there will be ample opportunity to discuss and feedback on the specific geographical areas or potential impact of the flight path options during Stage 3.

If you have any questions or feedback on anything within the material, or difficulty in accessing the materials, please email us at: airspace@heathrow.com.

We will be in touch soon to provide you with an update on our progress with our ACP prior to our Stage 2 submission this summer.

Many thanks for your support in this engagement.

Kind regards,



From: DD - Airspace
Sent: 29 March 2023 16:52
To: [REDACTED]
Cc: DD - Airspace
Subject: Heathrow Stage 2 Feedback and DPE Update Session Material
Attachments: Summary of Step 2A Feedback & DPE_vF.pdf; Summary of Step 2A Feedback & DPE_vF_Appendix.pdf

Dear [REDACTED]

We recently concluded our Stage 2 Feedback and DPE update sessions with community and industry stakeholder groups. Please could you share the attached engagement material with FLOPSC? The material includes:

- The slide pack presented in the sessions, including:
 - A Glossary of Terms
 - A full list of all stakeholders engaged at Stage 2
 - The DPE Methodology
- A Technical Appendix with maps of all options and summary tables showing the results of the Design Principle Evaluation

We are open to receiving any comments or questions on our approach to the DPE or on the DPE outputs. Please note that there will be ample opportunity to discuss and feedback on the specific geographical areas or potential impact of the flight path options during Stage 3.

If you or any of the committee members have any questions or feedback on anything within the material, or difficulty in accessing the materials, please email us at: airspace@heathrow.com.

We will be in touch soon to provide you with an update on our progress with our ACP prior to our Stage 2 submission this summer.

Many thanks for your support in this engagement.

Kind regards,
[REDACTED]

Heathrow Stage 2 Feedback and DPE Update Session Material

DD - Airspace <airspace@heathrow.com>

Wed 29/03/2023 16:53

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

Bcc:

[Redacted content]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

 2 attachments (13 MB)

Summary of Step 2A Feedback & DPE_vF.pdf; Summary of Step 2A Feedback & DPE_vF_Appendix.pdf;

Dear Sir/Madam,

Thank you to those of you who attended one of our recent Stage 2 Feedback and DPE update sessions. We very much appreciate the time that you gave for this engagement. As promised in the sessions, we have now attached the engagement material including:

- The slide pack presented in the sessions, including:
 - A Glossary of Terms
 - A full list of all stakeholders engaged at Stage 2
 - The DPE Methodology
- A Technical Appendix with maps of all options and summary tables showing the results of the Design Principle Evaluation

We are open to receiving any comments or questions on our approach to the DPE or on the DPE outputs. Please note that there will be ample opportunity to discuss and feedback on the specific geographical areas or potential impact of the flight path options during Stage 3.

If you have any questions or feedback on anything within the material, or difficulty in accessing the materials, please email us at: airspace@heathrow.com.

We will be in touch soon to provide you with an update on our progress with our ACP prior to our Stage 2 submission this summer.

Many thanks for your support in this engagement.

Kind regards,



From: DD - Airspace
Sent: 29 March 2023 16:57
To: DD - Airspace; [REDACTED]
Subject: FW: Heathrow Stage 2 Feedback and DPE Update Session Material
Attachments: Summary of Step 2A Feedback & DPE_vF.pdf; Summary of Step 2A Feedback & DPE_vF_Appendix.pdf

Hi [REDACTED]

Please could you share the email below and attached engagement material regarding our recent Stage 2 Feedback and DPE update sessions with [REDACTED]

Many thanks,
[REDACTED]

From: DD - Airspace <airspace@heathrow.com>
Sent: Wednesday, March 29, 2023 4:53 PM
To: DD - Airspace <airspace@heathrow.com>
Subject: Heathrow Stage 2 Feedback and DPE Update Session Material

Dear Sir/Madam,

Thank you to those of you who attended one of our recent Stage 2 Feedback and DPE update sessions. We very much appreciate the time that you gave for this engagement. As promised in the sessions, we have now attached the engagement material including:

- The slide pack presented in the sessions, including:
 - A Glossary of Terms
 - A full list of all stakeholders engaged at Stage 2
 - The DPE Methodology
- A Technical Appendix with maps of all options and summary tables showing the results of the Design Principle Evaluation

We are open to receiving any comments or questions on our approach to the DPE or on the DPE outputs. Please note that there will be ample opportunity to discuss and feedback on the specific geographical areas or potential impact of the flight path options during Stage 3.

If you have any questions or feedback on anything within the material, or difficulty in accessing the materials, please email us at: airspace@heathrow.com.

We will be in touch soon to provide you with an update on our progress with our ACP prior to our Stage 2 submission this summer.

Many thanks for your support in this engagement.

Kind regards,
[REDACTED]

Heathrow Stage 2 Feedback and DPE Update Session Material

DD - Airspace <airspace@heathrow.com>

Wed 29/03/2023 16:53

To: [REDACTED]

📎 2 attachments (13 MB)

Summary of Step 2A Feedback & DPE_vF.pdf; Summary of Step 2A Feedback & DPE_vF_Appendix.pdf;

Dear [REDACTED]

Thank you for attending one of our recent Stage 2 Feedback and DPE update sessions. We very much appreciate the time that you gave for this engagement. As promised in the sessions, we have now attached the engagement material including:

- The slide pack presented in the sessions, including:
 - A Glossary of Terms
 - A full list of all stakeholders engaged at Stage 2
 - The DPE Methodology
- A Technical Appendix with maps of all options and summary tables showing the results of the Design Principle Evaluation

We noted your request for physical copies of the engagement pack. Apologies we were not able to provide this at the NACF meeting today. Would you like us to post you a hard copy to your preferred address?

We are open to receiving any comments or questions on our approach to the DPE or on the DPE outputs. Please note that there will be ample opportunity to discuss and feedback on the specific geographical areas or potential impact of the flight path options during Stage 3.

If you have any questions or feedback on anything within the material, or difficulty in accessing the materials, please email us at: airspace@heathrow.com.

We will be in touch soon to provide you with an update on our progress with our ACP prior to our Stage 2 submission this summer.

Many thanks for your support in this engagement.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 30 March 2023 09:27
To: [REDACTED]; DD - Airspace
Subject: RE: Heathrow Update Session Mon 27 March Reminder

Hi [REDACTED]

You should have received an email yesterday afternoon with the engagement material including the slide pack that was presented in the session and 5 appendices of additional information. Please let me know if you have any questions or difficulty in accessing the materials.

Kind regards,

[REDACTED]
Heathrow Airspace Team

From: DD - Airspace
Sent: 31 March 2023 16:32
To: DD - Airspace; [REDACTED]
Subject: RE: Heathrow Stage 2 Feedback and DPE Update Session Material

Dear [REDACTED]

I have tried to email you the engagement materials, but the Technical Appendix appears to be too large for your inbox. The main slide pack should have reached your inbox in my email below. Please let me know if you would like to view the supplementary information included in the Technical Appendix and I can share this through an alternative method.

Kind regards,
[REDACTED]

From: DD - Airspace <airspace@heathrow.com>
Sent: Thursday, March 30, 2023 11:21 AM
To: [REDACTED] DD - Airspace <airspace@heathrow.com>
Subject: Heathrow Stage 2 Feedback and DPE Update Session Material

Dear [REDACTED]

Thank you to those of you who attended one of our recent Stage 2 Feedback and DPE update sessions. We very much appreciate the time that you gave for this engagement. As promised in the sessions, we have now attached the engagement material including:

- The slide pack presented in the sessions, including:
 - A Glossary of Terms
 - A full list of all stakeholders engaged at Stage 2
 - The DPE Methodology
- A Technical Appendix with maps of all options and summary tables showing the results of the Design Principle Evaluation

Due to the size of the attached files for your inbox, I am sending the documents to you separately. Please find attached the slide pack and I will send another email with the technical appendix.

We are open to receiving any comments or questions on our approach to the DPE or on the DPE outputs. Please note that there will be ample opportunity to discuss and feedback on the specific geographical areas or potential impact of the flight path options during Stage 3.

If you have any questions or feedback on anything within the material, or difficulty in accessing the materials, please email us at: airspace@heathrow.com.

We will be in touch soon to provide you with an update on our progress with our ACP prior to our Stage 2 submission this summer.

Many thanks for your support in this engagement.

Kind regards,
[REDACTED]

From: DD - Airspace
Sent: 31 March 2023 15:14
To: DD - Airspace; [REDACTED]
Subject: RE: Heathrow Stage 2 Feedback and DPE Update Session Material

Dear [REDACTED]

I have tried to email you the engagement materials, but the Technical Appendix appears to be too large for your inbox. The main slide pack should have reached your inbox in my email below. Please let me know if you would like to view the supplementary information included in the Technical Appendix and I can share this through an alternative method.

Kind regards,
[REDACTED]

From: DD - Airspace <airspace@heathrow.com>
Sent: Friday, March 31, 2023 2:55 PM
To: [REDACTED] DD - Airspace <airspace@heathrow.com>
Subject: Heathrow Stage 2 Feedback and DPE Update Session Material

Dear [REDACTED]

We recently concluded our Stage 2 Feedback and DPE update sessions with community and industry stakeholder groups. We have now attached the engagement material including:

- The slide pack presented in the sessions, including:
 - A Glossary of Terms
 - A full list of all stakeholders engaged at Stage 2
 - The DPE Methodology
- A Technical Appendix with maps of all options and summary tables showing the results of the Design Principle Evaluation

Due to the large size of the files for your inbox, I am sending the documents to you separately. Please find attached the slide pack and I will send another email with the technical appendix.

We are open to receiving any comments or questions on our approach to the DPE or on the DPE outputs. Please note that there will be ample opportunity to discuss and feedback on the specific geographical areas or potential impact of the flight path options during Stage 3.

If you have any questions or feedback on anything within the material, or difficulty in accessing the materials, please email us at: airspace@heathrow.com.

We will be in touch soon to provide you with an update on our progress with our ACP prior to our Stage 2 submission this summer.

Many thanks for your support in this engagement.

Kind regards,
[REDACTED]

From: [REDACTED]

Sent: 11 April 2023 11:51

To: [REDACTED]

Cc: [REDACTED]

Subject: Heathrow Stage 2 Feedback and DPE Update Session Material

Attachments: Summary of Step 2A Feedback & DPE_vF.pdf; Summary of Step 2A Feedback & DPE_vF_Appendix.pdf

Dear FLOPSC Members,

We recently concluded our Stage 2 Feedback and DPE update sessions with community and industry stakeholder groups. Please find attached the slide pack presented in the sessions that include:

- A Glossary of Terms
- A full list of all stakeholders engaged at Stage 2
- The DPE Methodology
- A Technical Appendix with maps of all options and summary tables showing the results of the Design Principle Evaluation

We are open to receiving any comments or questions on our approach to the DPE or on the DPE outputs. Please note that there will be ample opportunity to discuss and feedback on the specific geographical areas or potential impact of the flight path options during Stage 3.

Should you have any questions or feedback on anything within the material, or difficulty in accessing the materials, please email us at: airspace@heathrow.com.

We will be in touch soon to provide you with an update on our progress with our ACP prior to our Stage 2 submission this summer.

Kind regards



From: [REDACTED]
Sent: 27 April 2023 13:54
To: [REDACTED]
Cc: [REDACTED]; DD - Airspace; [REDACTED]
Subject: DPE workshop record note

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

Dear [REDACTED]
please find below FRP's notes of the points we made at the three DPE workshops (22, 23 & 27Mar23), and HAL's responses at the time.

We hope you find these helpful as you prepare the record note.

My apologies for taking so long to get these to you. You will understand that we're also focused on the SER.

Best regards,
[REDACTED]
Friends of Richmond Park

'Do nothing/minimum' option

FRP: what exactly is Heathrow's do-nothing option, and is there is a 'do-minimum" option, e.g. one that replicates the current flight paths but with PBN?

HAL: 'do-nothing' is exactly what we do now for all operations (westerly/easterly, arrivals/departures). There is a PBN option [DP9a] that is not exactly, but very close to, existing departure flight paths. The CAP1616 reference to 'do-minimum' option refers to a situation where there isn't a baseline to use, e.g. if the airport operations are changing significantly. "Do nothing" performs badly in the DPE because if nothing is changing it does not deliver modernisation.

Design Principle Evaluation (DPE) ranking

FRP: what weighting will you put on the different DPs in carrying out the DPE?

HAL: we don't know yet but some things. e.g. minimising the impact of noise, will be high on the agenda; there is lots of data and it can be confusing, but the model is showing the trade-offs clearly - if you want this, say CO2 reduction, you can't have that, say, minimum number of residents overflow; government policy wants them all but at some stage someone, maybe the SoS, has to decide between them.

Flight arrivals from the north-west (N. America)

FRP: slide "Feedback on the method used to develop options (2)" is incorrect. Item 4 reads "Query why there are more departure options to the south of the airport than to the north." I should read "Query why there are more arrival options to the south of the airport than from the north-west."

FRP: why are there so few arrival flight paths from the north-west (Bovingdon stack) when 70% of flights from North America arrive from that direction and only 30% from the west (Ockham stack); the model paths result in long routing round the west and south of the airport, even for the 27R arrivals?

HAL: Overall there are more arrivals from the south and south-east, so they dominate the traffic and flight paths; also the model is driven by residential population so it avoids dense areas [Buckinghamshire being more densely populated than Surrey]. Heathrow agree today's paths come in from the north/north-west so this is a very big 156

change, driven by the model inputs; 'it's a prime example of the conflict between objectives (minimising population overflow vs. CO2)'

FRP: What proportion of current flights, arrivals and departures, are to north/north-west i.e. from N. America? Is it 70% of arrival flights from N. America?

HAL: Will take away and reply (**Action: HAL**)

Options at the DPE stage

FRP: going into the DPE, how many options, what's the starting number?

HAL: There are 181 options in total. These consist of 40 groups of PBN departures, which are six routes per group, 93 arrival options and 48 vectored arrival options. And all of those options are now reflected in the different Design Principle Evaluation tables that we will share in this presentation.

Utility of DPs and DPE Stage

FRP: what was the point in doing the Design Principles and Design Principle Evaluation except to satisfy the CAA because you're not going to take any action on the basis of them?

HAL: There's no requirement in CAP1616 for us to discontinue or shortlist options at the DPE stage (Stage 2). It's not that it wasn't worth doing the Design Principles and Design Principle Evaluation. They just continue to enhance this view that we've had that we need to get to the Initial Options Appraisal stage to start to understand the impact of those options. In terms of what is traditionally done in the Design Principles and Design Principle Evaluation, yes, this is quite a significant shift. But that is due to the gravity of the process that we're going through. And ultimately CAP1616 wasn't written for the size of change, across a number of different changes.

Design Principle Evaluation methodology

FRP: unlike other airports' Stage 2 DPEs (which divided many DPs into sub-DPs for proper evaluation), the slides show Heathrow having only divided DP2, and then only into two parts. Is that true for all of the DP evaluations you've done: departures and arrivals?

HAL: There are many more subcategories throughout many of these Design Principles.

FRP: When you come to publish this in the manual that goes up to the CAA portal you will have to set out the criteria upon which you decided whether each of these boxes was red or amber or green or grey. Will you be covering these criteria in the packet you're going to send us next week?

HAL: I'll cover it now, but I'm only going to cover a few examples [DPs 2 & 4]. When you get the slides with the appendices in, it has the full methodology criteria breakdown for what constitutes red, green and amber for each DP. [Note: this was included as Appendix 3 – DPE Methodology]

PBN Departures

FRP: Can you explain the slide and the difference between the three boxes (PBN Departures, PBN Arrivals, Vectored Arrivals)?

HAL: **PBN departure** paths are designed to be PBN from day one; since all departing aircraft start from the same static position it is ideal for PBN; options are grouped into 6 because they have to work together (i.e. each initial option after take-off has to have 6 branches corresponding to the various destinations). **PBN arrival** options are evaluated as individual routes; in practice PBN can't give us the 42-44 arrivals per hour we need for the busiest times, because of spacing, so we would use them in quiet times - 04.30-06.00 is quiet enough (only 14 flights over the 90 minutes) and we could use 2-3 different PBN paths on different days. **Vectored arrival** options; since there would be very few PBN arrivals at first, we'd use the vectored arrival options for all but the quietest times for the foreseeable future, to get the required flights per hour.

FRP: When would you expect to be switching over to PBN paths?

HAL: When technology allows it, but when that will be depends on who you ask; I'm not sure PBN will ever give us the required throughput of 42-44 arrivals per hour.

FRP: If you're not going to be using PBN for arrivals for a long time, why are you spending so much time developing them now?

HAL: Because we're required by the CAA to say how we would use PBN for all our operations.

FRP: For vectored arrivals, is 8nm the nearest convergence point to the airport or could you use a nearer point?

HAL: Yes about 8 nm, and 22nm [20nm] is the furthest, as now. We're looking how we can manage different paths for convergence at 8-9nm, 9-10nm etc, to give respite.

PBN Arrivals

FRP: will the IOA analysis be based upon the earlier adoption of PBN, which you say is 14 flights in the 04:30-06:00 period, or when the long-term transition to PBN has settled down into steady-state in, say, 20 years' time when just about all aircraft and crews will be PBN capable?

HAL: The numbers of aircraft using these routes isn't to do with aircraft equipage. Not all aircraft can fly all routes. So when we're talking about early morning arrivals, we've assumed that all aircraft could fly all routes, we actually know that's not the case. PBN equipage isn't the reason here that we're saying you can't land 42 planes an hour on using PBN alone. It's more physics and practicality that not having the flexibility of vectoring that makes it very hard to achieve the landing rates required to put all aircraft on a single flight path

FRP: Do you think that will still be the case in 2040?

HAL: It depends who you ask. But it could be those vector arrival options that are formalised into two PBN routes in 20 years' time. The evolution of PBN and these PBN routes will take some time. When we get to Stage 3, HAL will have to nail its colours to the mast regarding the traffic forecasts [underpinning its appraisals and choices].

Tranquility

FRP: Is 20/day an average of 365 days or of only westerly operations?

HAL: I can't remember, but it doesn't matter - if we use a PBN path overflying RP it will always have more than 20 flights/day on any measure, so this gives 'not met' on the tranquillity metric for all paths over RP. We used 1 flight/day for 04.30-06.00 because there are only 14 flights, so it wouldn't have been caught by the 20/day.

Noise

FRP: When you talk about the definition of overflying Richmond Park, does the definition use height and cone?

HAL: Yes, it's the overflight cone based on the CAA's definition of overflight - which is based on that 5.5% climb gradient assumption and 48.5 degrees cone either side. Next stage, IOA, different kettle of fish.

Biodiversity

FRP: the metric is "The area (km²) of SPA, SACs and/or SSSIs" but that has no catering for the fact that one SSSI might be overflowed at high altitude on a cone somewhere out in East London. Whereas on Richmond Park, arrivals are at about 1,800ft and 80dB. The effects are quite dramatically different.

HAL: For the DPE evaluation, we're looking at whether it overflies any of those areas below 3,000ft only. So if it is overflying something at 6,000ft, it's not caught at the stage. In the Initial Options Appraisal that will be broken down even further into, I think 0-1640ft because that's 500m, and then 2,000ft and 3,000ft. And we can see whether there are any new areas that are overflowed. You might be overflowed by one today, you might be overflowed by two in the future. But if one of those is newly overflowed, then you could actually have some adverse effects on that one new flight. The next stage of analysis drills down into that detail.

DPE results

FRP: Will the slide pack and the appendices give the red amber green bottom line for all 181 options?

HAL: Yes, you will see the bottom-line summary for each of the 181 options [Note: in fact the appendix only showed the RAG for each option against each DP, without any summary RAG rating for any option]

Timeline

FRP: Can you confirm your Nov-22 CAA indicative timeline for Stage 2 upload 28-Jul-23?

HAL: We'll be uploading the material in July.

From: DD - Airspace
Sent: 17 May 2023 13:28
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: DPE workshop record note

Dear [REDACTED]

Thank you for sharing FRP's notes from the DPE engagement sessions. Heathrow has taken the lead on drafting the note this time, and we have used your email to help inform our note. The note from the engagement session has then been independently reviewed and verified by [REDACTED] from Headland.

The DPE session note will be included in our Stage 2 submission to the CAA this summer and will be published on the CAA's airspace change portal.

Many thanks,

From: DD - Airspace
Sent: 10 July 2023 18:24
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Extensions to AONBs

Good afternoon, [REDACTED]

Thank you for your email in respect of the ongoing work on proposed new boundaries for the Chiltern AONBs. As you are aware, Air Navigation Guidance 2017 requires an airspace change sponsor to consider AONBs in the following way.

'Where practicable, it is desirable that airspace routes below 7,000 feet should seek to avoid flying over Areas of Outstanding Natural Beauty (AONB) and National Parks;'

In our work to date, we have considered the current boundary of relevant AONBs & National Parks and have provided an initial appraisal of these areas as they currently stand within our Initial Options Appraisal. We commit to keep up to date with the review process these areas are currently undergoing and if the boundaries are changed because of this work, we will adapt our future assessment and appraisal of these areas to include any additional area covered under AONB status.

Kind regards

[REDACTED]

Airspace Change Policy Manager

Heathrow

The Compass Centre, Nelson Road
Hounslow, Middlesex, TW6 2GW

March 2023

An aerial photograph of Heathrow Airport at dusk. The terminal buildings are illuminated from within, and the tarmac is lit by ground lights. A large aircraft is visible on the right side of the frame. The sky is a mix of orange and blue.

Airspace Modernisation: Airspace Change Proposal

Step 2A Engagement on Design Principle Evaluation

Heathrow



DISCLAIMER:

The information contained within this document does not constitute a formal company position and does not necessarily reflect a final view.

It is provided to you to facilitate discussions with Heathrow Airport and feedback on our developing proposals. The incomplete and preliminary nature of the information should be recognised when reviewing this material.

Heathrow Airport Limited will not accept or assume any responsibility or liability for the accuracy or correctness of the information or of any figures provided, or any assumptions that may be drawn from them. All route options shown are for discussion only.

This information is intended for your sole purpose, is confidential and should not be shared outside your organisation or with any third party without the express consent of Heathrow Airport Limited.

Heathrow will submit a formal submission that will be publicly available on the CAA Airspace Change Portal in 2023.

All 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, our Design Principles, our appraisals and stakeholder engagement and consultation.



Agenda:

1. Purpose of the workshop
2. Recap
3. Summary of Stakeholder Feedback on the CLOO
4. Design Principle Evaluation:
 - a) CAP1616 Requirements
 - b) Heathrow's Approach
 - c) High-Level Summary & Observations

Break

 - d) Evaluation Methodology
5. Next Steps

Appendix:

1. Glossary
2. List of Stakeholders Engaged
3. DPE Methodology

Purpose of this workshop

Today's workshop is for:

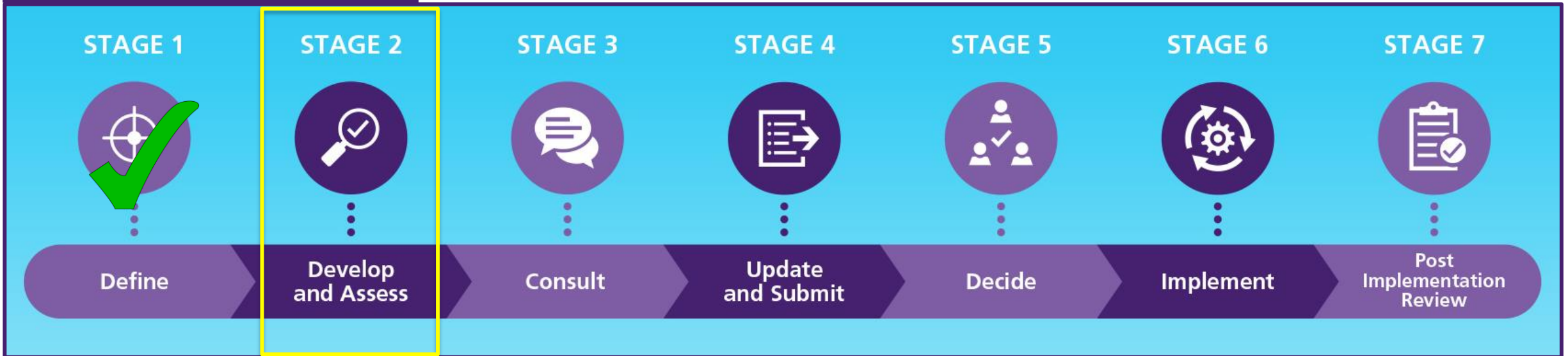
- Heathrow to share the feedback received from the Step 2A engagement on the Comprehensive List of Options
- Heathrow to explain the approach taken to the Design Principle Evaluation (DPE) and to share a summary of the results
- Stakeholders to ask questions and share their views on Heathrow's approach to the DPE

Today's workshop is not to:

- Discuss Stage 1 elements (e.g. Design Principles)
- Discuss Stage 3 elements or the appraisal of impacts (there will be future opportunities for this)
- Discuss the wider political/regulatory landscape

We are currently at Stage 2 of the CAA's CAP1616 Airspace Change Process

CAP1616 PROCESS OVERVIEW



INDICATIVE TIMELINE*

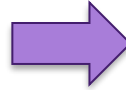


*Timeline dependent upon ACOG Masterplan, and coordination with NATS and other airports' airspace change proposals

Heathrow passed the CAA's Stage 1 Gateway, developing a Statement of Need and a list of Design Principles

Step 1A: Statement of Need

"The change sponsor prepares a Statement of Need setting out what airspace or opportunity it is seeking to address"



Step 1B: Design Principles

"The design principles encompass the safety, environmental and operational criteria and strategy policy objectives that the change sponsor aims for in developing the airspace change proposal"



Heathrow passed the Stage 1 Gateway in March 2022

Our Design Principles for Airspace Modernisation:

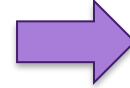
1		Be safe	
2		Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example, Air Navigation Guidance). This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits	
3	Our new airspace design must	Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise	
4		Reduce the contribution to climate change from CO2 emissions and other greenhouse gas emissions arising from Heathrow's aircraft activities	
5		Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines and cargo handlers, passengers, and local communities	
6		Provide predictable and meaningful respite to those affected by noise from Heathrow's movements	
7		Seek to avoid overflying the same communities with multiple routes including those to/from other airports	
8		Contribute to minimising the negative impacts of night flights	
9	And should also	Keep the number of people who experience an increase in noise from the future airspace design to a minimum	
10		Keep the total number of people who experience noise from the future airspace design to a minimum	
11		Enable the efficiency of other airspace users' operations	
12		Minimise the impact to all stakeholders from future changes to Heathrow's airspace	

There is no prioritisation of the principles beyond this grouping into "must" and "should"

At Stage 2 we are required to develop options and evaluate them against our Design Principles

Step 2A: Comprehensive List of Options

"The change sponsor develops one or more options that address the Statement of Need and align with the defined Design Principles"



Step 2A: Design Principle Evaluation (DPE)

"The change sponsor produces a DPE that sets out how the design options have responded to the design principles"

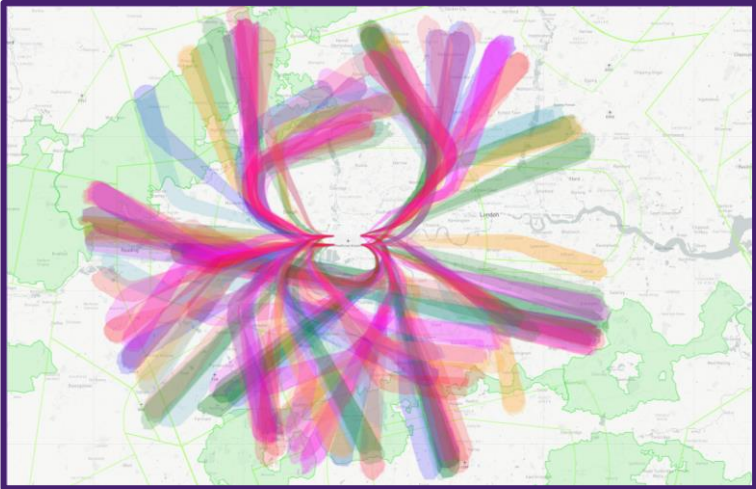
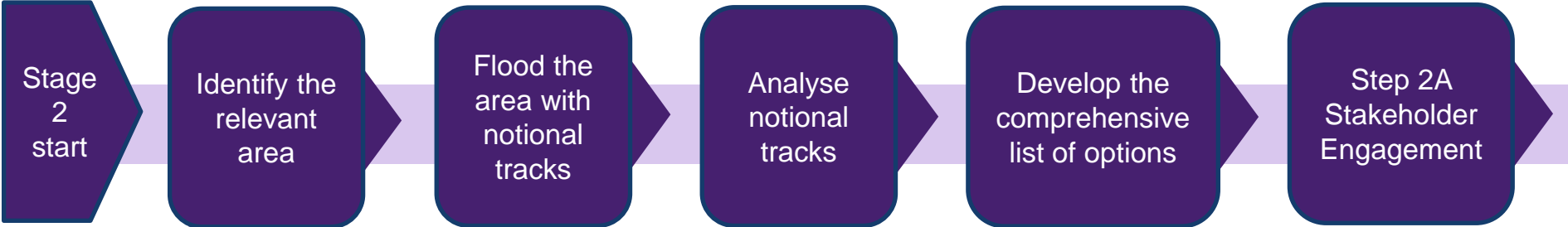
CAP1616 Stage 2 Gateway Requirements

DEVELOP AND ASSESS GATEWAY	Status
<p>In order for the CAA to sign-off the 'Develop and Assess' gateway:</p> <ul style="list-style-type: none"> the change sponsor must have produced a comprehensive list of airspace change design options 	Complete
<ul style="list-style-type: none"> the change sponsor must have engaged with relevant stakeholders to explore those options to the CAA's satisfaction against the requirements in Appendix C 	Complete
<ul style="list-style-type: none"> the change sponsor must have produced a design principle evaluation that the CAA has accepted, showing how its design options have responded to the design principles 	In progress
<ul style="list-style-type: none"> the change sponsor must have produced an Initial options appraisal (phase I) 	Next Step
<ul style="list-style-type: none"> the CAA must have produced and then published an assessment that the options appraisal is satisfactory against the requirements in Appendix E 	Stage 2 Gateway August 2023

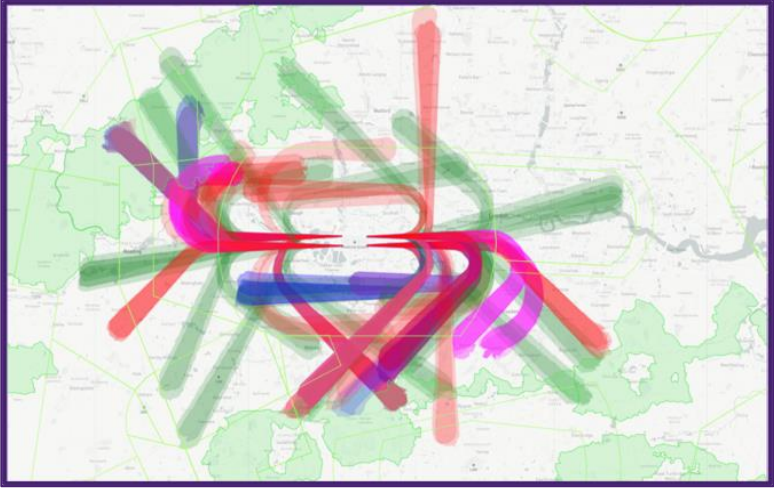
Design Principle	Option A	Option B	Option C
1	Green	Green	Yellow
2	Yellow	Red	Green
3	Green	Yellow	Yellow
4	Green	Red	Green
5	Yellow	Green	Red
6	Yellow	Red	Yellow
7	Green	Green	Green
8	Green	Yellow	Yellow
9	Red	Green	Red
10	Yellow	Yellow	Yellow

ILLUSTRATIVE EXAMPLE

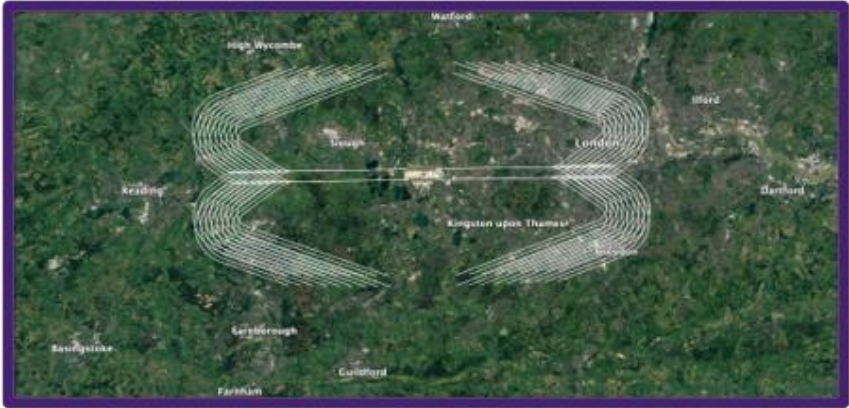
We developed a Comprehensive List of Options to align with the Statement of Need and Design Principles



The comprehensive list of PBN departure options



The comprehensive list of PBN arrival options



Example of Vectored arrival options

All options are subject to change throughout the airspace change process as options are matured in detail and refined in accordance with safety requirements, our Design Principles, our appraisals and stakeholder engagement and consultation.

We engaged on the comprehensive list of options in late 2022, as required under the CAP1616 process

CAP1616 requires that the “*change sponsor preliminary tests these [the options] with the same stakeholders it engaged with in Step 1B to ensure that they 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.*”

In November 2022, we held 6 workshops for community stakeholder representatives and 7 workshops for industry stakeholders. We presented our comprehensive list of options and associated concepts to all stakeholders engaged at Stage 1.

We circulated the workshop material to over 400 stakeholders, regardless of whether they attended a workshop, and provided a four-week feedback response period.

We asked stakeholders:

- For feedback on our approach to developing the comprehensive list of options;
- Whether they were satisfied that the options were aligned with the design principles; and
- For feedback on our potential concepts for respite, night flights and noise efficient operations.

In January 2023 we also conducted 2 public focus groups and 3 schools focus groups in areas local to the airport.

Today, we will summarise the key feedback themes, our response, and any amendments we have made to the Comprehensive List of Options

We received feedback on the list of options from a range of community and industry stakeholder groups

Industry	FASI Airports	Local Authorities	Community Groups (e.g. LCF & NACF representatives)		Environmental Groups
American Airlines	Biggin Hill Airport	Bracknell Forest Council	Buckinghamshire Council	Local Resident Walton-on-Thames, Surrey	Clean Air Bayswater
BALPA	Farnborough Airport Ltd	Elmbridge Borough Council	Communities Against Gatwick Noise Emissions	Luton and District Association for the Control of Aircraft Noise	Chiltern Society
British Airways	London City Airport	London Borough of Hounslow	London Borough of Ealing	Molesey Residents' Association	The Chilterns Conservation Board
British Helicopter Association	London Luton Airport	Royal Borough of Kingston, London Borough of Sutton	Ealing Aircraft Noise Action Group	Pavilion Association	CPRE Oxfordshire
Delta Airlines	London Southend Airport	Mole Valley District Council	Englefield Green Action Group	Plane Hell Action South East London	Friends of Richmond Park
Lufthansa Group	MAG Stansted Airport	Newham Council	Forest Hill Society	Richmond Heathrow Campaign	Kent Downs AONB Unit
Ministry of Defence	RAF Northolt	Runnymede Borough Council	HACAN	London Borough of Richmond Upon Thames	The National Trust
NATS	London Gatwick Airport	Sevenoaks District Council	Heathrow Strategic Planning Group	Teddington Action Group	The Royal Parks
United Airlines		London Borough of Southwark	Iver Village Residents' Association	Westbourne Park Road East Resident's Association	<p>The complete list of engaged stakeholders is provided in the Appendix</p>
WestJet Airlines		St Albans City and District Council	London Borough of Lewisham	The Windlesham Society	
		London Borough of Waltham Forest	Local Authorities' Aircraft Noise Council	Windsor & Maidenhead Borough Council	
		Waverley Borough Council			

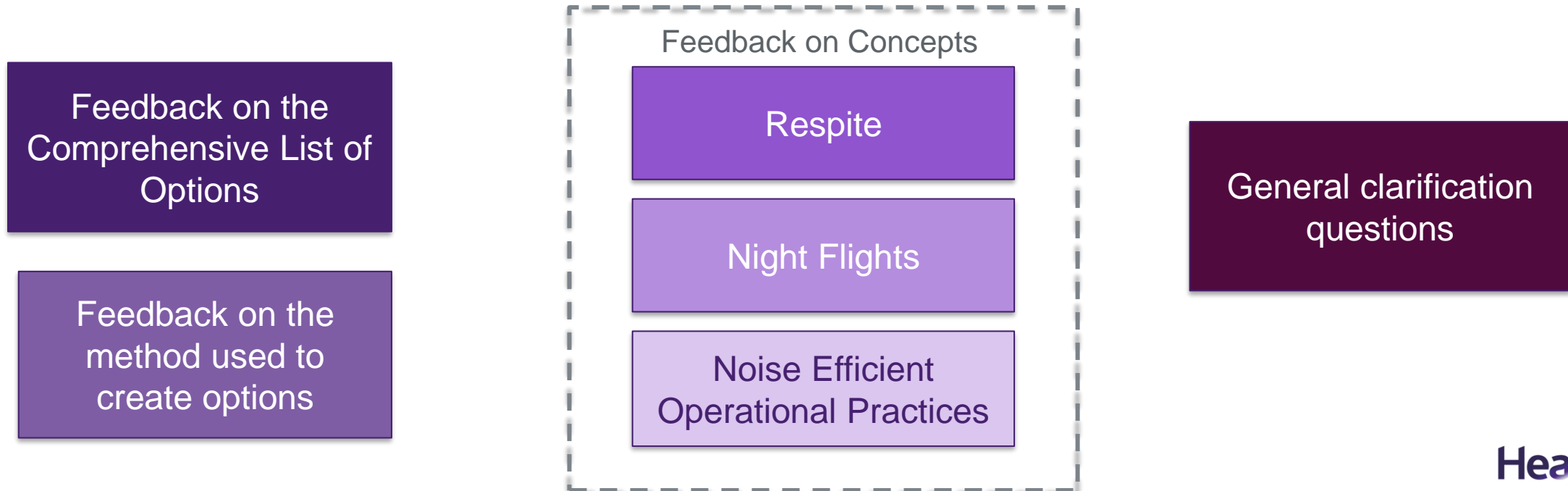


Summary of Stakeholder Feedback on the Comprehensive List of Options

Stakeholder feedback on the options has been categorised into 6 key themes

Much of the feedback that was received related to previous or future stages of the ACP, and therefore did not directly relate to the options we shared in the engagement material. This presentation provides a summary of only that feedback which relates to our Comprehensive List of Options, with the wider feedback to be considered by Heathrow at future stages of the ACP.

All feedback forms and associated email correspondence, including Heathrow's responses to key issues, will be in our CAA Stage 2 submission and uploaded to the CAA's Airspace Change Portal.



Feedback related to our comprehensive list of options

Feedback on the Comprehensive List of Options

The comprehensive nature of our options meant that we received only two suggestions for potential changes to the list.

	Stakeholder Feedback	Heathrow Response
1	Suggestion that the options should include a “do nothing” option	The Comprehensive List of Options does contain a 'Do Nothing' option for each runway end. It is evaluated in its own right in the DPE and retained throughout the Airspace Change Proposal for comparison purposes.
2	Suggestion that there should be an easterly departure option that does not overfly Richmond Park owing to its specific tranquil characteristics.	Added. We also considered options that do not overfly Bushy Park or Windsor Great Park: we already have an option that does not overfly Bushy Park and we would not be able to avoid Windsor Great Park without significant impact on airport throughput.



This new option was designed based on the previous departure route created for a blend of Design Principle's 2, 4, 9 & 10 and adjusted to avoid overflying Richmond Park.

Feedback on the method used to develop options (1)

Feedback on the method used to create options

Some of the feedback included requests for more detail on how the options in the comprehensive list were developed.

	Sample of Stakeholder Feedback	Heathrow Response
1	Request for more detail on how DPs will be weighted/prioritised, and how the DPs were “blended” in the Comprehensive List of Options.	DPs have not been prioritised beyond the grouping into “must” and “should” principles. The “blended” options were created using software that compared all possible DP weighting combinations to identify the overall highest performing tracks.
2	Query whether options to meet DP9 and DP10 could be based on visitor numbers rather than population data.	We used available population data to create these options. Data on peoples’ movements to work/school/leisure facilities would be needed to develop options that take account of visitors. CAA confirmed they expect appraisals to be based on resident population data.
3	Query whether options for DP9 consider those currently overflowed who could experience additional noise/disturbance.	The options created for DP9 consider those who are currently overflowed and those who could be newly overflowed <u>in terms of population numbers</u> . Further assessment of the options will consider the <i>impacts</i> of noise <u>in terms of noise metrics</u> .

Feedback on the method used to develop options (2)

Feedback on the method used to create options

	Sample of Stakeholder Feedback	Heathrow Response
4	Query why there are more departure options to the south of the airport than to the north.	There is more demand for travel to international destinations to the south and southeast of Heathrow.
5	Query why there aren't more arrival routes to the north-east.	The location of Northolt and London City airports reduces our flexibility in route positioning to the northeast, where there is very dense population. This meant that our design principle-led development of options directed us to identify options elsewhere.
6	Query whether the needs of other airports are being considered in the development of route options ("how" routes will be used as well as "where").	We continue to work closely with surrounding airports, and ACOG, to ensure our airspace designs work together as effectively as possible.
7	Query whether potentially newly overflowed communities are being actively engaged in workshops.	We engaged new stakeholders at Stage 2, including local young people and communities who might be overflowed in future. We also engaged all 77 local authorities surrounding Heathrow. We are developing our plans for wider community engagement at Stage 3, when we will undertake public consultation.

Feedback on potential concepts

Respite

We shared a range of potential concepts for delivering:

- Respite
- Night flights
- Noise efficient operational practices

Respite		
	Sample of Stakeholder Feedback	Heathrow Response
1	Request for clearer definition of “respite”, and Heathrow’s objectives. Query the frequency and duration of breaks, and the reduced noise level, required to provide health and wellbeing benefit.	We are using industry information and research to understand how respite should be defined and the noise differentials required to benefit overflowed communities. Research will help inform the inclusion of respite concepts in this ACP. Detailed information on the planned provision of respite will be provided at the Stage 3 public consultation.
2	Support for route alternation versus the concern that route alternation will lead to more people being overflowed.	The provision of respite will lead to a degree of “sharing” of noise impacts across different communities with more people overflowed in total, compared to fewer routes overflying fewer people.
3	Concerns from industry on respite routes leading to greater complexity and a need for Heathrow to use more airspace.	We know some airline operators have concerns about the potential introduction of multiple respite routes. As our options and concepts evolve, we will work with airlines and neighbouring airports to assess feasibility, impacts and risks of route alternation.

Feedback on potential concepts

Night Flights		
	Sample of Stakeholder Feedback	Heathrow Response
1	Request that night flights are banned (generally from 11pm to 7am).	Night flight regulations are the responsibility of Government policy and are therefore outside the scope of our ACP.
2	Support for/opposition to bespoke late running departure routes: some concern that this approach could impact surrounding airports by using more airspace.	Most stakeholders were supportive of the use of bespoke late departure routes during/after disruption, so long as these were only used when justifiable, and that Heathrow does all it can to reduce late-runners under normal operating conditions. Heathrow continues to consider the feasibility of this concept.
3	Suggestion that respite routes for night flights could potentially increase fuel burn and emissions.	The full benefits and impacts of respite routes will be assessed at Stage 3, once we have system options. Respite routes could increase emissions so this will need to be considered against the noise benefits of respite routes. Government policy is to limit and where possible reduce the adverse effects of noise.

Feedback on potential concepts

Noise Efficient Operational Practices		
	Sample of Stakeholder Feedback	Heathrow Response
1	Request that arrivals operate CDO ¹ , and query whether CDO is possible on curved approaches.	Arriving aircraft will continue to operate CDO and we aspire to improve CDO performance. CDO is possible on curved approaches.
2	Request that NADP ² is mandated for all departures.	Research into the pros and cons of different NADPs is being led by the CAA. We will apply the findings of this work to our designs where appropriate.
3	Suggestion that imposing NADPs and steeper climb gradients needs careful consideration: some modern aircraft are designed to be quieter at shallower gradients and NADPs can lead to increased noise and carbon footprint.	
4	Request for CCO ³ and CDO versus a query whether benefits of these outweigh impacts on neighbouring airports.	We are aiming to achieve both CCO and CDO for all routes. Heathrow's CCO/CDO improvements should enable neighbouring airports to better achieve their noise efficient practices.

¹ Continuous Descent Operations

² Noise Abatement Departure Procedure

³ Continuous Climb Operations

General clarification questions

We received some general clarification requests relating to our ACP

	Sample of Stakeholder Feedback	Heathrow Response
1	Query whether ATC will continue to vector aircraft on departures above 4,000 feet.	We expect there to be less vectoring above 4,000ft than today. In our analysis of the options in Stage 2, we assume aircraft stay on the route centrelines to 7,000 feet.
2	Query why climb gradient for departures is lower than at surrounding airports.	Climb gradients have not yet been determined and may vary by departure route. We assumed a climb gradient of 5.5% as a standard comparator for developing and evaluating the options at Step 2A.
3	Request for clarity around how trade-offs between noise and carbon will be assessed (and how “disproportionate” will be defined).	Noise and carbon effects of each option will be assessed in the IOA and FOA. We will determine whether a route “would disproportionately increase CO2 emissions” based on this data and we will be open and transparent with CAA and stakeholders on our decisions.
4	Requests that Heathrow works with surrounding airports to ensure: <ul style="list-style-type: none"> • Each airport can operate CDA and CCO • Communities are not overflowed by multiple routes • Best practice in PBN implementation 	We are working with other UK airports, via ACOG, to try to separate future flight paths, allowing aircraft to climb and descend continuously and avoiding overflying communities with multiple routes. We also engage frequently with CAA, DfT and ACOG to keep abreast of emerging best practice.



Design Principle Evaluation

CAP1616 requires us to undertake a Design Principle Evaluation (DPE) at Stage 2A

CAP1616 guidance for completion of the DPE states:

- The DPE is described as a “high level” assessment of how the options have performed against the Design Principles
- The design options are to be evaluated against the design principles in a fair and consistent manner

The Change Sponsor produces a DPE at Step 2A. There is no specific requirement in CAP1616 for change sponsors to carry out stakeholder engagement on the DPE, however we know that the DPE outcomes will be of interest to some of our stakeholders.

CAP1616 requires us to assess whether each Design Principle is **not met**, **partially met** or **met**. We have applied a Red, Amber, Green (RAG) assessment to illustrate the DPE results. Where assessment is not possible at this stage, the option is coloured Grey.

There is no specific requirement in CAP1616 for change sponsors to discount ("drop") any options based on the results of the DPE.

The DPE is a high-level assessment of the options.

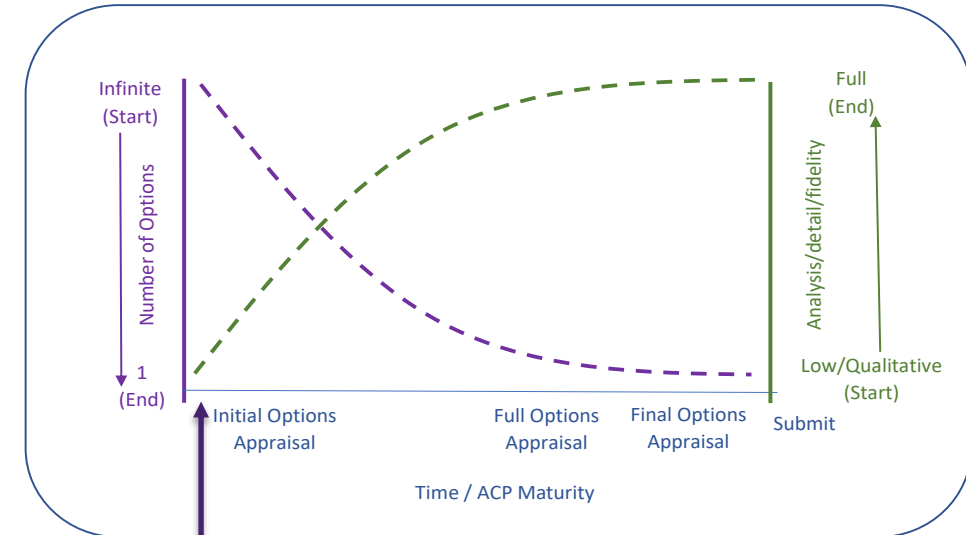
Following the DPE, Step 2B requires us to carry out an initial appraisal of the impacts of each of the options taken through the DPE, known as the Initial Options Appraisal (IOA)

The DPE is evaluating options that will mature and evolve as we receive further information

Challenges and Limitations of the DPE:

1. CAP1616 is not prescriptive: airport sponsors need to develop their own methodology
2. Our comprehensive list of options was created based on generic assumptions; these assumptions will change as we get more information:
 - Climb gradients
 - Other airports' airspace change proposals
 - Heathrow's future arrivals mechanism ("holding stacks")
 - Aircraft types
3. The outputs of the IOA may provide greater detail to complement the DPE results
4. **Our options will evolve** as we consider system options (arrivals and departures together, easterly operations with westerly operations) and carry out more detailed analysis during the three stages of options appraisal as indicated in the diagram

Options (and our analysis of the options) mature as we work through the ACP process



WE ARE HERE

Our DPE provides a high-level assessment of how well our design options align with our design principles

Our Approach

- We identified criteria for assessing each option against each Design Principle
- A “do nothing” option was assessed as an option in its own right
- Where relevant data was available, a quantitative assessment was undertaken. Otherwise, a qualitative assessment was applied

DPE Results

- Many of the options emerged as **amber**. This **validates the need to carry out greater analysis of options** in the IOA
- Options assessed as **red** perform worse than other options for that particular criterion: it is not always an indicator that the option should be discounted

Further Analysis

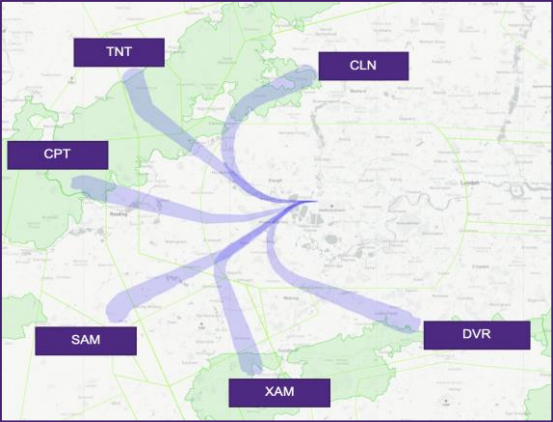
- Due to the high-level nature of the DPE, **we are not discounting any new options based on the DPE alone**
- We will consider the DPE and IOA results together to understand the likely **impact** of the options

Quantitative analysis: based on numerical data and metrics

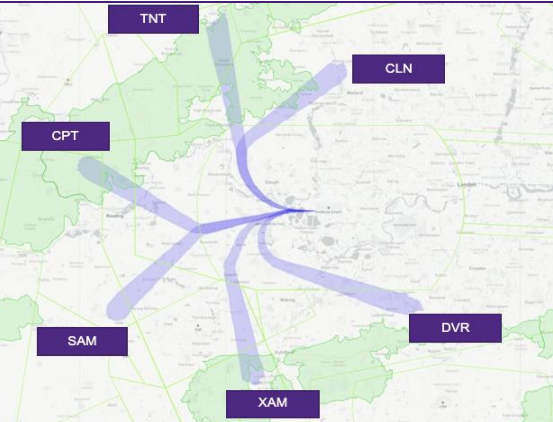
Qualitative analysis: based on observations and expertise of the technical team, including non-numerical information such as air traffic control procedures or other airports' design options

The comprehensive list of flight path options were re-named for analysis in the DPE

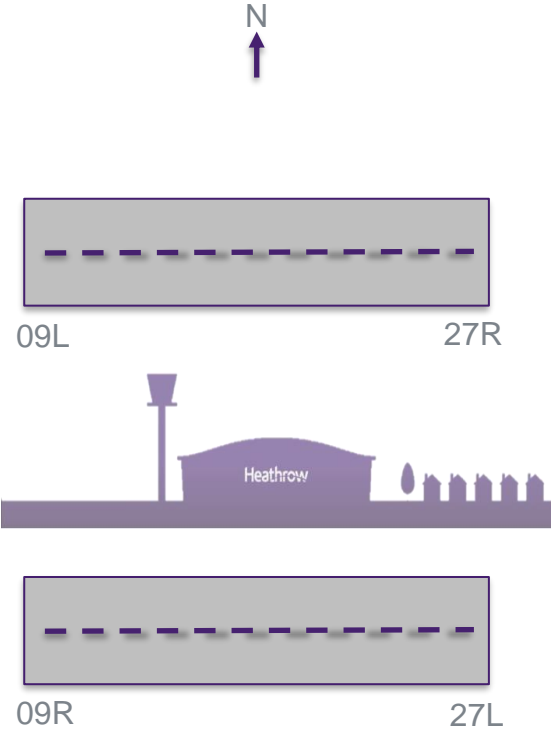
Example: Options created for Design Principle 2 were re-named as Option A in the DPE. For PBN Departures, options were assessed as groups of six departure routes.



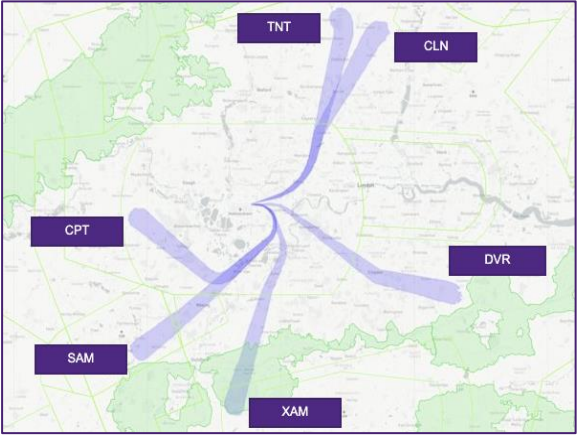
27R Option A for Design Principle 2



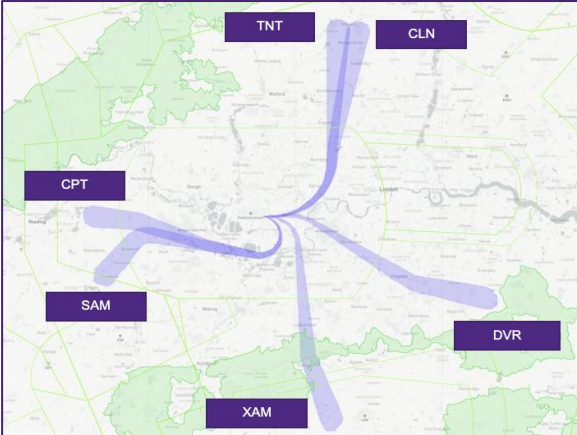
27L Option A for Design Principle 2



These options were designed to minimise the number of people exposed to noise up to 7,000ft, whilst also considering CO₂ and AONBs



09L Option A for Design Principle 2



09R Option A for Design Principle 2

DPE results were generated for PBN departure options, PBN arrival options and vectored arrival options

The table below summarises DPE results for groups of departure options from the southern runway when on westerly operations (runway 27L).

The majority amber result confirms the need for us to carry out more detailed analysis of each option in the IOA (as required by CAP1616): we will review both sets of results together.

	'Do Nothing'	Option A	Option B	Option C	Option D	Option E	Option F	Option G	Option H
1									
2	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Red	Green	Green	Green	Green	Green	Green	Green	Green
4	Red	Red	Yellow	Green	Green	Red	Yellow	Red	Red
5	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
10	Grey	Green	Green	Yellow	Yellow	Green	Yellow	Green	Green
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

The high-level summary provides an initial view of how the options perform against the Design Principles

The table summarises DPE results for groups of departure options from the southern runway when on westerly operations (runway 27L).

The “do-nothing” option performs poorly for DP2 and DP3 and is generally the worst performing option.

DP6 relates to respite. DP8 relates to night flights. These are grey because assessment is not possible at this stage.

Design Principle	'Do Nothing'	Option A	Option B	Option C	Option D	Option E	Option F	Option G	Option H
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Red	Green	Green	Green	Green	Green	Green	Green	Green
4	Red	Red	Yellow	Green	Green	Red	Yellow	Red	Red
5	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
10	Grey	Green	Green	Yellow	Yellow	Yellow	Yellow	Green	Green
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Most options perform well for DP3 (noise efficient operational practices).

Options that are red for carbon (DP4) were created with noise principles in mind. This illustrates the trade-off between noise and carbon.

The options appear to perform well against DP 10 which is keeping the total number of people who experience noise to a minimum.

Options shown in this document are subject to change throughout the airspace change process as the level of analysis becomes more detailed and additional information is received



BREAK

The approach to the DPE varied by option type

All options have been evaluated per single runway operation, not as a complete system of westerly and easterly departures and arrivals to/from both runways. This allows us to consider many more options for a final solution. **There are 181 options in total.**

PBN Departures

For the development of the Comprehensive List of Options, flight paths for departures from all 4 runway ends to each of the **six** common network points (SIDs) were assembled using **inputs for each design principle.**

All six SIDs need to be sufficiently separated from each other. Therefore, the assessment of PBN departure flight paths is shown **as a collective group of six SIDs per Option.**



PBN Departure Option A for Runway 27L

PBN Arrivals

For the development of the Comprehensive List of Options, flight path options for **PBN arrivals** were assembled using **inputs for each design principle.**

PBN arrival options have been evaluated as individual route options. This enables us to consider whether it would be technically feasible and beneficial to use any one or more routes **for arrivals during less busy times.**



PBN Arrival Option A for Runway 27L

Vectored Arrivals

For the development of the Comprehensive List of Options, **vectored** arrival options were assembled based on **the direction we expect arriving aircraft to come from.**

Vectored arrival options have been **assessed in distance bands** (nautical miles) from the runway, to help us determine whether it would be beneficial and/or feasible to use different vectoring areas during different periods to provide respite or relief from noise.



Vectored Arrival Option A for Runway 27L

A RAG status was assigned for each design principle, based on quantitative and qualitative analysis

Quantitative Analysis:

- Where the Design Principle can be measured using numerical metrics, we ranked each option by percentile ranges.
- For example, when assessing the 'overall mileage' metric, the option with the highest track miles equals 100% and the option with the lowest track miles equals 0%. All other options are given a percentile within this range.

Design Principle	Detailed Criteria	Option A	Option B	Option C	Option D	Option E	Option F
Design Principle Number	Quantitative Assessment:	454.8	441.0	432.8	437.7	450.3	445.7
Indicative percentile range 0%-100% across all options		100%	37%*	0%*	22%*	80%*	59%*
		Within highest 25 th percentile	Within middle 50 th percentile	Within lowest 25 th percentile	Within lowest 25 th percentile	Within highest 25 th percentile	Within middle 50 th percentile
		Not Met	Partially Met	Met	Met	Not Met	Partially Met

ILLUSTRATIVE

Qualitative Statements:

- Where the Design Principle cannot be assessed using numerical metrics, the technical team undertook a high-level qualitative assessment.
- Qualitative statements are set out in the DPE methodology slides in the Appendix of this slide pack.


If **neither** a Qualitative or Quantitative assessment was possible at this stage, this was shown as **N/A** and the cell is **Grey**

The DPE Methodology assesses all options against criteria set for each of the Design Principles

- The DPE assesses all options against the 12 Design Principles for PBN departures, PBN arrivals, and vectored arrivals using this process:




- The tables on the following slides present an example of the DPE methodology applicable to PBN departures, PBN arrivals and vectored arrivals for Design Principle 4 and Design Principle 2.

DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
4. 	Reduce the contribution to climate change from CO2 emissions and other greenhouse gas emissions arising from Heathrow's aircraft activities	Consider track length (nautical miles) from runway end to the relevant point in the upper airspace network.*	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile.

*For PBN Vectored Arrivals it is not possible to assess the option against this criteria until we receive additional information from NATS about Heathrow's future arrivals mechanism ("holding stacks")

The Airspace Modernisation Strategy is separated in Design Principle 2 as the key driver of airspace change

DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
2.	Safety	DP1 outcome used to evaluate this	Qualitative	DP1 evaluation	DP1 evaluation	DP1 evaluation
	Integration of diverse airspace users	DP11 outcome used to evaluate this	Qualitative	DP11 evaluation	DP11 evaluation	DP11 evaluation
	Simplification of airspace, improving efficiency	DP5 outcome used to evaluate this	Qualitative	DP5 evaluation	DP5 evaluation	DP5 evaluation
	Environmental sustainability	DP2, DP3, and DP4 outcomes used to evaluate this	Qualitative & Quantitative	Evaluated in DP2, DP3, and DP4 and outcome met all three DPs.	Evaluated in DP2, DP3, and DP4 with mixture of Met, Partially Met and Not Met outcome.	Evaluated in DP2, DP3, and DP4 and outcome did not meet the criteria.
	Overall AMS Evaluation (as required by the CAA)			All 4 AMS outcomes Met	All 4 evaluations Partially Met or mix of Met/Not Met	All 4 AMS outcomes Not Met
	Minimise and where possible reduce, the total negative impacts on health and wellbeing from aircraft noise, and, assess against DfT's altitude-based priorities	Evaluate the population exposed to 70dB SEL	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		Number of people overflown (between 0-4000ft, at least once per day on average)	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		Number of people overflown (between 4-7,000ft, at least once per day on average)	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		Track mileage between runways and points within the network*	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile


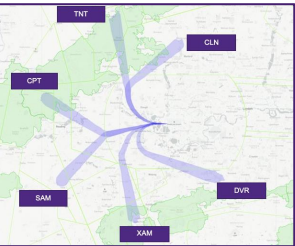

*For PBN Vectored Arrivals it is not possible to assess the option against this criteria until we receive additional information from NATS about Heathrow's future arrivals mechanism ("holding stacks")

Design Principle 2 is broken down further into more detailed criteria relating to environmental factors

DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
2.	Tranquillity	The area (km ²) of AONBs and National Parks overflown	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		The area (km ²) of Historic Parks and Gardens overflown	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		Overfly Richmond Park at least 20 times per day, on average below 7,000ft (PBN departures options and vectored arrivals options). Overfly Richmond Park at least once a day between 0430-0600, below 7,000ft (PBN Arrivals options)	Qualitative	Option not expected to overfly Richmond Park 20 times per day for PBN Departures/ Vectored Arrivals options , or at least once a day for PBN Arrivals options	N/A	Option expected to overfly Richmond Park 20 times per day for PBN Departures/ vectored options , or at least once a day for PBN Arrivals options
	Ecology and/or biodiversity	The area (km ²) of SPA, SACs and/or SSSIs overflown	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile.
	Prevent any worsening of air quality, to remain within local authorities' limits	If an option has a change to flightpaths below 1,000ft it will be evaluated as 'Partially Met' but requires further analysis to determine the scale of the impact on local air quality. If an option has no change to flightpaths below 1,000ft it will be evaluated as 'Met'	Qualitative	Option unlikely to affect local air quality	Option has potential to affect local air quality below 1,000ft.	N/A
Overall DP 2 Evaluation				All evaluations Met	All evaluations Partially Met or a mix of Met/Not Met	All evaluations Not Met



Criteria were created for the assessment of each Design Principle

DP	Design Principle	Detailed Criteria	Option A	Option B
4. 	Reduce the contribution to climate change from CO2 emissions and other greenhouse gas emissions arising from Heathrow's aircraft activities	Track length from runway end to relevant point in the upper airspace network (nautical miles)	 Option within highest 25 th percentile	 Option within middle 50 th percentile
Overall Assessment for DP4			Not Met	Partially Met

ILLUSTRATIVE

Some Design Principles were broken down into multiple criteria for assessment

DP	Detailed Criteria		Option A	Option B
2.	AMS Objectives	Safety	Expected to maintain/improve existing levels of safety: further assurance required	Expected to maintain/improve existing levels of safety: further assurance required
		Integration of diverse airspace users	Mixed impacts on other airspace users	Mixed impacts on other airspace users
		Simplification of airspace, improving efficiency	Likely to maintain operational efficiency	Likely to maintain operational efficiency
		Environmental sustainability	Mixed environmental impacts	Mixed environmental impacts
	Overall AMS Evaluation (required by the CAA)		All 4 evaluations Partially Met	All 4 evaluations Partially Met
	Minimise/reduce negative impacts on health & wellbeing from aircraft noise & altitude-based priorities	Population exposed to 70dB SEL	Option within lowest 25 th percentile	Option within lowest 25 th percentile
		No. of people overflown (0-4000ft, >once/day)	Option within lowest 25 th percentile	Option within lowest 25 th percentile
		No. of people overflown (4000-7000ft, >once/day)	Option within lowest 25 th percentile	Option within middle 50 th percentile
		Track mileage between runways and network points	Option within highest 25 th percentile	Option within middle 50 th percentile
	Tranquillity	AONBs/ National Parks (Total km ²)	Option within lowest 25 th percentile	Option within lowest 25 th percentile
		Historic Parks & Gardens, public parks (Total km ²)	Option within lowest 25 th percentile	Option within lowest 25 th percentile
		Richmond Park (overflight 20x per day* on average)	Does not overfly Richmond Park	Does not overfly Richmond Park
	Ecology/ Biodiversity	Total km ² of SPA, SAC, SSSI (0-3000ft)	Option within middle 50 th percentile	Option within middle 50 th percentile
	Prevent any worsening of air quality, to remain within local authorities' limits		Potential impact to AQ <1000ft	Potential impact to AQ <1000ft
	Overall Assessment for DP2		Mix of Met/Not Met	Mix of Met/Not Met



Options shown in this document are subject to change throughout the ACP as the level of analysis becomes more detailed and additional information is received

* At least once a day between 0430-0600 period for PBN arrivals



Next Steps

Next Steps

Following this session, we will produce an Initial Options Appraisal (IOA).

The results of our IOA will be shared with you prior to our Stage 2 submission, and the DPE and IOA outputs will be published on the CAA's Airspace Change Portal.

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

INDICATIVE

Note: The progress of our ACP is dependent on the progress of other airports, NATS, and the Masterplan which is being developed by the Airspace Change Organising Group (ACOG)

Thank you for your engagement

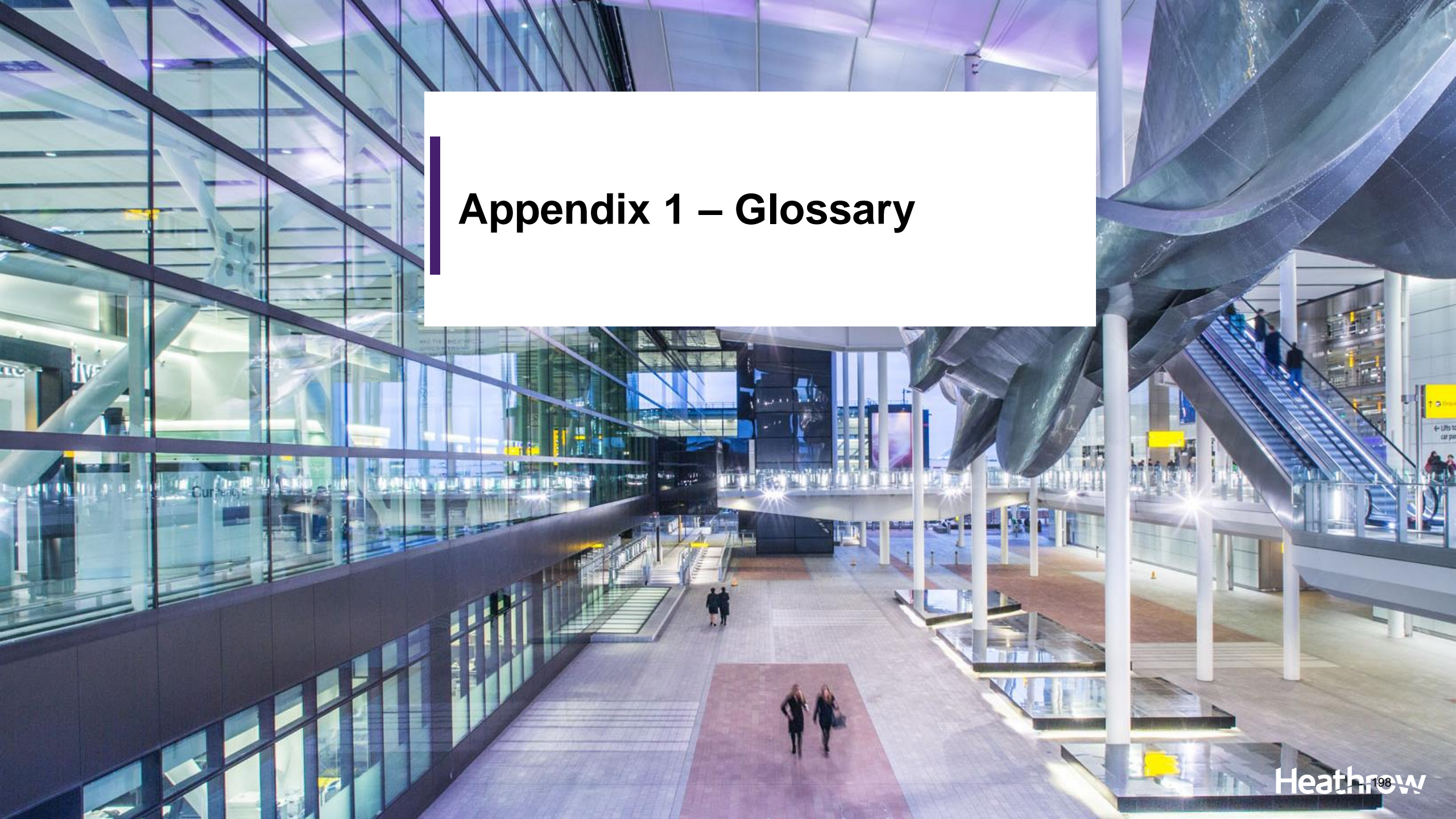
We will provide you with:

1. A copy of this presentation
2. A Technical Appendix with maps of the options and summary tables showing the results of the Design Principle Evaluation

As always, we are open to receiving comments and questions on the material shared today. Please email any feedback to: airspace@heathrow.com

All Stage 2 work, including evidence of engagement with stakeholders, will be submitted to the CAA in Summer 2023 and published on the Airspace Change Portal.

We welcome comments and questions on our approach to the DPE and DPE outputs at this stage, not on the specific geographical areas or potential impacts of the flight path options. This discussion will take place at Stage 3 once we have more information to share about the options.



Appendix 1 – Glossary

Glossary

Term	Description
ACP Sponsor	An organisation that proposes, or sponsors, a change to the airspace design in accordance with the CAA's airspace change process. Heathrow is the sponsor of this airspace change.
Advanced Air Mobility (AAM)	Advanced Air Mobility is 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).
Airspace Change Organising Group (ACOG)	ACOG was established in 2019 at the request of the DfT and CAA 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 airports' individual airspace changes via an Airspace Modernisation Masterplan.
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. The process ensures that when the CAA decides whether or not to approve a proposal to change UK airspace, it does so in an impartial and evidence-based way that takes proper account of the needs and interests of all affected stakeholders.
Airspace Change Proposal (ACP)	Airspace change proposals (ACPs) are requests from a 'change sponsor', usually an airport or a provider of air navigation services (including air traffic control), to change the notified airspace design. ACPs must follow the CAA's CAP1616 airspace change process.
Airspace Modernisation Strategy (AMS)	The Airspace Modernisation Strategy , or AMS, is co-sponsored by the CAA and DfT. It sets out the 'ends', 'ways' and 'means' of modernising the design, technology and operations of airspace. A nationwide airspace modernisation programme is underway across UK airports in support of the AMS.
Air Traffic Control (ATC)	Air Traffic Control, or ATC, is a service provided by ground-based air traffic controllers who direct aircraft on the ground and through a given section of controlled airspace, and can provide advisory services to aircraft in non-controlled airspace.
Altitude Based Priorities	To assist the CAA and sponsors, the Government has laid out (in Air Navigation Guidance, or ANG) the altitude-based priorities which should be taken into account when considering the potential environmental impact of airspace changes. These refer to consideration of noise, CO2 emissions, AONBs and local circumstances.

Glossary

Term	Description
Area of Outstanding Natural Beauty (AONB)	An area of outstanding natural beauty is 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.
Biodiversity	Biodiversity is the variety of all life on Earth including all species of animals and plants. Biodiversity supports the vital benefits humans get from the natural environment.
CAP1616	CAP1616 is the CAA's airspace change process guidance, introduced in December 2017. CAP1616 established additional CAA scrutiny and validation of sponsors' work and evidence as they develop proposals; increased requirements relating to transparency and engagement; and introduced new opportunities for those impacted by proposals to have their voices heard.
Civil Aviation Authority (CAA)	The CAA is the UK's aviation regulator, 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.
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.
Controlled Airspace (CAS)	A defined area of airspace in which Air Traffic Control (ATC) services are provided. Controlled airspace usually exists in the immediate vicinity of busier airports and at higher levels where air transport flights would tend to cruise.
Comprehensive List of Options (CLOO)	Airspace change sponsors are required to develop a Comprehensive List of Options at Stage 2 of the CAP1616 process. The CLOO should include a comprehensive set of airspace design options that address the Statement of Need and align with the Design Principles set at Stage 1.
Continuous Climb Operations (CCO)	CCO is a noise efficient departure procedure whereby the aircraft climbs continuously to its cruising level without levelling off. Heathrow's Comprehensive List of Options assumes that aircraft will perform a CCO to at least 7,000ft.
Continuous Descent Operations (CDO)	CDO is a noise efficient arrival procedure whereby the aircraft descends continuously from its cruising level without levelling off. Heathrow's Comprehensive List of Options assumes that aircraft will perform a CDO from at least 7,000ft.
Department for Transport (DfT)	The Department for Transport (DfT) is the UK Government department responsible for the English transport network (and a limited number of transport matters in Scotland, Wales and Northern Ireland that have not been devolved).

Glossary

Term	Description
Design Principle (DP)	Design Principles encompass the objectives that the airport seeks to achieve through the airspace change, including safety, policy, environmental and operational factors. Design Principles are set through engagement with stakeholders at Stage 1, and they guide the airspace designers to create suitable flight path options at Stage 2.
Design Principle Evaluation (DPE)	The Design Principle Evaluation is a requirement of the CAP1616 airspace change process at Stage 2. It involves assessing the Comprehensive List of Options against each Design Principle.
Easterly Alternation	A Heathrow project to enable respite from noise through runway alternation when on easterly operations. The timescales to deliver full easterly alternation will be subject to both this ACP and the separate process for seeking permission for associated groundworks.
FASI	Heathrow is part of the 'Future Airspace Strategy Implementation-South' programme to re-design airspace in the south of the UK. There is also a 'FASI-N' programme for the north of the UK.
Flight Path Options	Flight path options are operationally viable (flyable) flight paths developed by Heathrow's technical airspace team.
Full Options Appraisal (FOA)	The FOA is required at Stage 3A of the CAP1616 process. It involves a quantitative assessment of the shortlist of flight path options.
Heathrow Expansion	A Heathrow project to build a new third runway to the north-west of the existing two runways and re-design the airspace to accommodate it. Heathrow was previously progressing airspace modernisation via its Airspace Change Proposal (ACP) for airport expansion and we consulted widely on these plans in 2018 and 2019. This project has remained on pause since 2020.
Holding Stack	Holding stacks are areas of airspace used as a waiting room which allow air traffic controllers to organise the planes before they land. Heathrow has four holding stacks located over navigation beacons that lend them their names. The locations of Heathrow's stacks have been the same since the 1960s.
Initial Options Appraisal (IOA)	The IOA is required at Step 2B of the CAP1616 process. It involves an assessment of the impacts (costs and benefits) of each of the viable options. The appraisal must use TAG, the DfT's appraisal guidance, which includes consideration of environmental impacts, economic impacts and health impacts associated with noise.
NATS En-Route Limited (NERL)	NATS is the air navigation service provider responsible for the UK's airspace above 7,000ft, and at many airports (including at Heathrow). NATS is the parent company of NERL who provide ATC services to aircraft flying in airspace over the UK and the eastern part of the North Atlantic.

Glossary

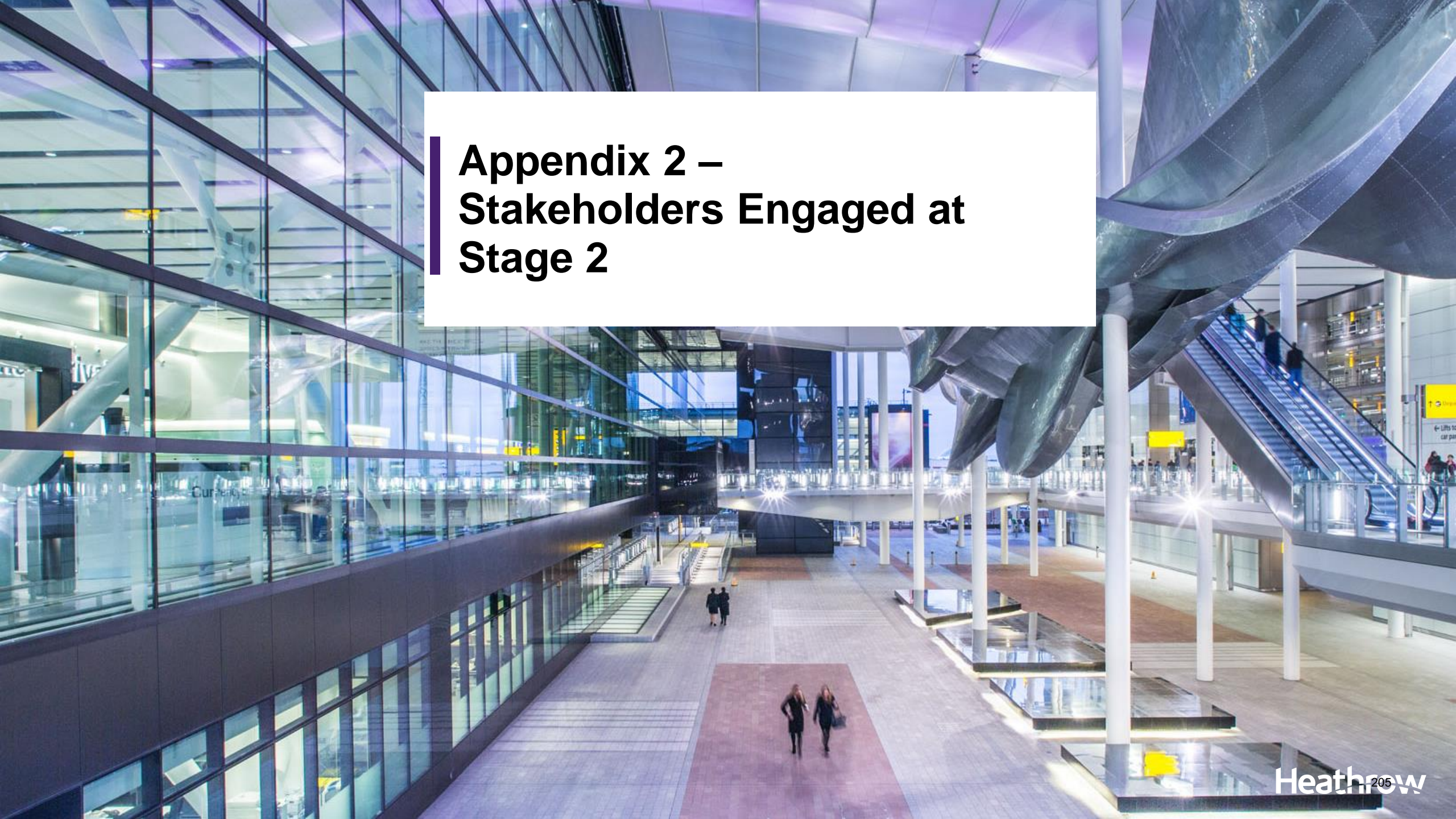
Term	Description
Nautical Miles (nm)	A nautical mile is a unit of length used in air, marine and space navigation.
Night Flights	<p>There is no formal ban on night flights at Heathrow, but the Government has placed restrictions on them since the 1960s. Night-time (23:30 - 06:00) operations at Heathrow are heavily restricted by the Government, which sets a limit of 5,800 night-time take-offs and landings a year. A night quota limit is also in place, which caps the amount of noise the airport can make at night.</p> <p>Around 80% of the night flights at Heathrow are between 04:30 - 06:00 with an average of 16 aircraft arriving each day between these hours. Heathrow has a voluntary ban in place that prevents flights from landing before 04:30. We also do not schedule any departures between 23:00 and 06:00.</p>
Noise Abatement Departure Procedures (NADP1 / NADP2)	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.
Noise Efficient Operational Practices	Noise efficient operational practices are considered to be: Continuous Climb Operations (CCO), Continuous Descent Operations (CDO), Noise Abatement Departure Procedures (NADPs), Steeper Approaches, Steeper Climbs, Landing Gear Deployment and Low Power Low Drag.
Notional Tracks	Notional tracks are lines drawn to/from a runway end to/from a point in the airspace network. They are based on basic principles of airspace design, but they cannot be considered 'flyable' flight paths. They are used to collect data on the areas that would be "overflowed" by them.
Overflight	CAA's CAP1498 document sets out a definition of overflight for use in ACPs. "Overflowed" is defined as "an aircraft in flight passing an observer at an elevation angle of 48.5° from the ground at an altitude below 7000ft" (CAA). The overflight metric enables the number of overflights experienced at locations on the ground to be calculated according to the agreed definition.
Overflight Cones	The CAA's CAP1498 document states that overflight above a given location should be measured using a cone. The cone identifies the airspace above a given location within which an aircraft might be perceived as "overflying" that location. This is because an aircraft does not need to be directly overhead to have an impact (noise and/or visual) on the local population.
Parks and Gardens	Areas of land designed, constructed, managed and maintained as a public park or garden. These normally have a defined perimeter and free public access, and generally sit within or close to urban areas.

Glossary

Term	Description
Percentile Range	A percentile range is between 0% and 100%. We have applied percentile ranges to options when using numerical (quantitative) metrics. The highest number for a given metric will score 100% and the lowest will score 0%. All other options are then assigned a percentile within this range.
Performance Based Navigation (PBN)	PBN improves the accuracy of where aircraft fly by using modern satellite navigation and moving away from outdated and conventional navigation techniques using ground-based beacons (it is similar to GPS "sat nav" devices that most people use in their cars today). PBN is being adopted worldwide through International, Regional and State level initiatives and regulations.
Qualitative Analysis	A method of assessment based on observations and expertise, including non-numerical information such as air traffic control procedures or other airports' design options.
Quantitative Analysis	A method of assessment based on numerical data and metrics.
Relief	A break from, or a reduction in, aircraft noise.
Respite	Scheduled relief from aircraft noise for a set period of time.
Sites of Special Scientific Interest (SSSI)	An SSSI is 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.
Special Areas of Conservation (SAC)	Protected areas in the UK designated under UK Government environmental regulations. These sites are classified as making a significant contribution to conserving habitats and species identified in the Habitats Directive .
Sound Exposure Level (SEL)	Occasional loud noise is measured in the UK by Sound Exposure Level (SEL). An SEL footprint can be created to show the geographical area over which a particular SEL is reached from a single noise event (e.g. the area in which the sound of a plane taking off reaches 70 decibels).
Special Protection Areas (SPA)	Special protection areas are areas in the UK protected due to known use by migratory birds and certain threatened species of bird.
Standard Instrument Departures (SIDs)	SIDs are published flight procedures that provide a departure route from the runway end to a common network point in the airspace. Heathrow has 6 published SIDs from each runway end.

Glossary

Term	Description
Statement of Need (SoN)	At the first stage of the airspace change process, airport sponsors are required to outline the objectives of the ACP, by setting out the airspace issue or opportunity it is seeking to address and what outcome it wishes to achieve.
Vectoring	Vectoring is the provision of navigational guidance to aircraft in flight by air traffic controllers (ATC). Vectoring helps to maximise use of available airspace.



Appendix 2 – Stakeholders Engaged at Stage 2

Stage 2 Engagement: Industry Stakeholders

Airlines	Airports & Local Airfields	Other Industry stakeholders		
Aer Lingus	Biggin Hill Airport	Airlines UK	British Hang Gliding and Paragliding Association	Iprosurv
American Airlines	Blackbushe Airport	Airspace4All	British Microlight Aircraft Association	Isle of Man CAA
British Airways	Denham Aerodrome	Airport Coordination Ltd	British Model Flying Association	Light Aircraft Association
Cathay Pacific	Elstree Aerodrome	Airport Operators Association	British Skydiving	Low Fare Airlines
Delta Airlines	Fairoaks Airport	Airfield Operators Group	Civil Aviation Authority (CAA)	Met Office
Etihad	Farnborough Airport	Aircraft Owners and Pilots Association	Department for Transport (DfT)	Military Aviation Authority
Flybe	Gatwick Airport	Airspace Change Organising Group (ACOG)	Drone Major	Ministry of Defence
KLM	London City Airport	Association of Remotely Piloted Aircraft Systems UK	Future Aviation Industry Working Group on Airspace Integration	National Air Traffic Services (NATS) – NERL, Heathrow, Swanwick
Lufthansa (Swiss)	Luton Airport	Aviation Environment Federation	General Aviation Alliance	Navy Command HQ
United	RAF Northolt	BAE Systems	Guild of Air Traffic Control Officers	PPL/IR (Europe)
Virgin	Southampton Airport	British Airline Pilots Association	Heathrow Airlines Operators Committee / AOE	UK Airprox Board
WestJet	Southend Airport	British Balloon and Airship Club	Heavy Airlines	UK Flight Safety Committee
	Stansted Airport	British Business and General Aviation Association	Helicopter Club of Great Britain	United States Visiting Forces
	White Waltham Airfield	British Gliding Association	Honourable Company of Air Pilots	
	Wycombe Air Park	British Helicopter Association	IATA	

Stage 2 Engagement: Local Authorities (1 of 2)

Barking and Dagenham London Borough Council	Croydon London Borough Council	Hammersmith & Fulham Council
Barnet London Borough Council	Dacorum Borough Council	Hampshire County Council
Basingstoke and Dean Borough Council	Dartford Borough Council	Haringey London Borough Council
Bexley London Borough Council	Ealing London Borough Council	Harlow Council
Bracknell Forest Council	East Hampshire District Council	Harrow London Borough Council
Brent London Borough Council	East Herts District Council	Hart District Council
Brentwood Borough Council	East Sussex County Council	Havering London Borough Council
Bromley Council	Elmbridge Borough Council	Hertfordshire County Council
Borough of Broxbourne Council	Enfield London Borough Council	Hertsmere Borough Council
Buckinghamshire County Council	Epping Forest District Council	Hillingdon London Borough Council
Camden London Borough Council	Epsom and Ewell Borough Council	Horsham District Council
Central Bedfordshire Council	Essex County Council	Hounslow London Borough Council
Chichester District Council	Greenwich London Borough Council	Islington London Borough Council
City of London Corporation	Guildford Borough Council	Kensington & Chelsea London Borough Council
Crawley Borough Council	Hackney London Borough Council	Kent County Council

Stage 2 Engagement: Local Authorities (2 of 2)

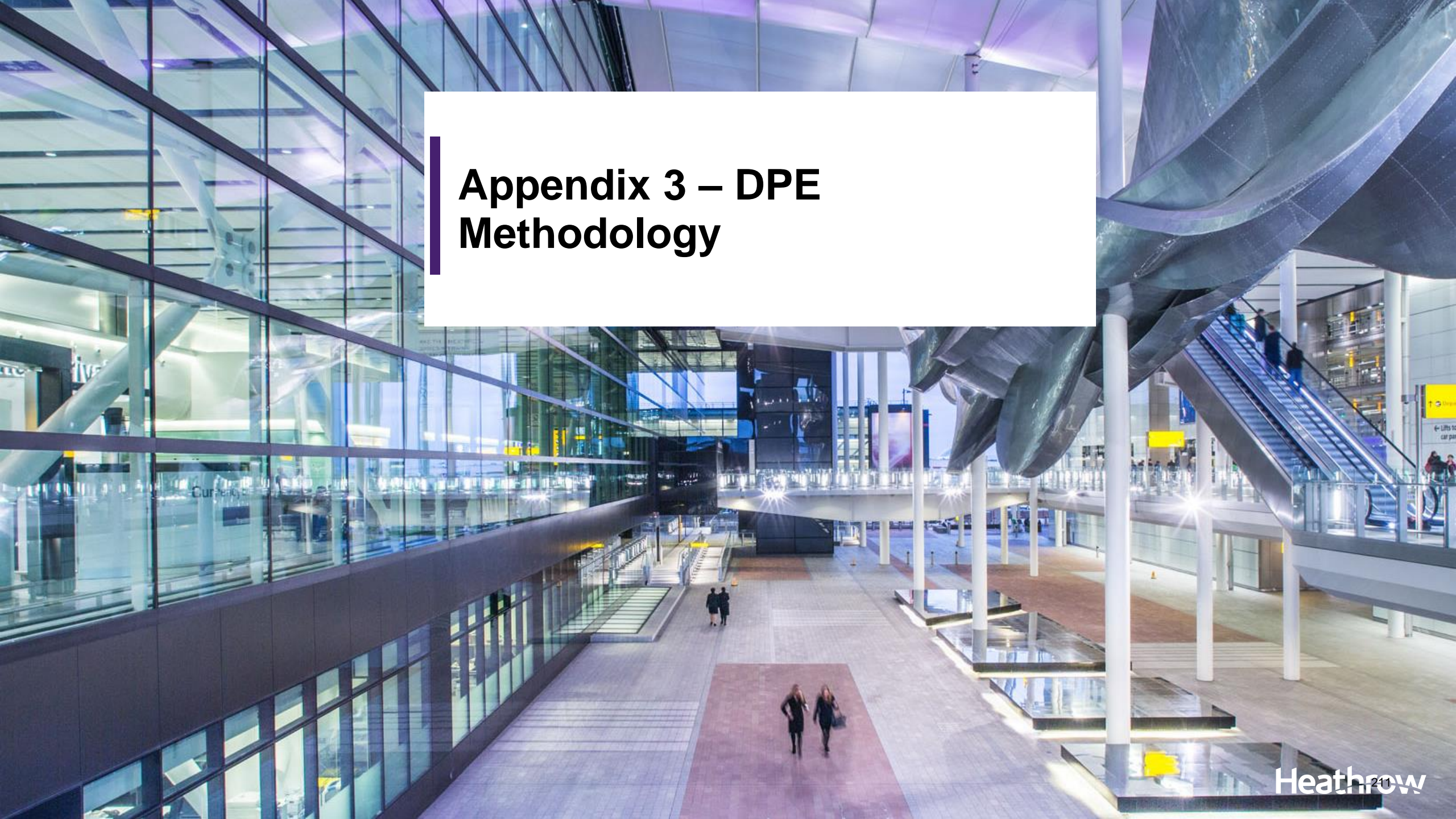
Kingston upon Thames Council	Reigate and Banstead Borough Council	Thurrock Borough Council
Lambeth London Borough Council	London Borough of Richmond-Upon-Thames, Wandsworth London Borough Council	Tower Hamlets London Borough Council
Lewisham London Borough Council	Runnymede Borough Council	Waltham Forest Council
Luton Borough Council	Rushmoor Borough Council	Watford Borough Council
Merton London Borough Council	Sevenoaks District Council	Waverley Borough Council
Mid Sussex District Council	Slough Borough Council	Welwyn Hatfield Borough Council
Milton Keynes Council	South Oxfordshire and Vale of White Horse District Councils	West Berkshire Council
Mole Valley District Council	Southwark Council	Westminster City Council
Newham London Borough Council	Spelthorne Borough Council	Windsor & Maidenhead Borough Council
North Hertfordshire District Council	St Albans City and District Council	Woking Borough Council
Northamptonshire County Council	Surrey County Council	Wokingham Borough Council
Old Oak and Park Royal Development Corporation	Surrey Heath Borough Council	
Oxfordshire County Council	Sutton London Borough Council	
Reading Borough Council	Tandridge District Council	
Redbridge London Borough Council	Three Rivers District Council	

Stage 2 Engagement: Community Groups

Committee for the Independent Scrutiny of Heathrow Airport (CISHA)	Friends of the Great Barn Harmondsworth	Local Community Forum (LCF)	Richings Park Residents Association
Cleveland Square Residents Association	Heathrow Association for the Control of Aircraft Noise (HACAN)	Local Resident Walton-on-Thames, Surrey	Richmond Heathrow Campaign (RHC)
Colnbrook Residents Association	Harmondsworth and Sipson Residents Association (HASRA)	Longford Residents Association	Stanwell Moor Resident Association
Colnbrook with Poyle Parish Council	Heathrow Strategic Planning Group (HSPG)	Lower Sunbury Residents Association (LOSRA)	Stanwell Preservation Action Group
Communities Against Gatwick Noise Emissions (CAGNE)	Heston Residents Association	Molesey Residents Association	Stanwell Village Hall
Cranford Residents Association	Iver Parish Council	Noise and Airspace Community Forum (NACF)	Teddington Action Group (TAG)
Ealing Aircraft Noise Action Group	Iver Village Residents Association	Paddington Residents Active Concern on Transport (PRACT)	The Windlesham Society
Englefield Green Action Group (EGAG)	Luton And District Association for the Control of Aircraft Noise (LADACAN)	Pavilion Association	Westbourne Park Road East Resident's Association (WPRERA)
Forest Hill Society	Local Authorities Aircraft Noise Council (LAANC)	Plane Hell Action South East (PHASE)	Wimbledon and Putney Commons Conservators and Friends

Stage 2 Engagement: Environmental Stakeholders

Environmental Groups		Areas of Outstanding National Beauty (AONB)
CPRE	Environment Agency	Chilterns
CPRE Bedfordshire	Friends of Richmond Park	High Weald
CPRE Berkshire	Friends of the Earth	Kent Downs
CPRE Buckinghamshire	Kew Gardens	North Wessex Downs
CPRE Kent	National Trust	South Downs
CPRE London	Natural England	North Wessex Downs
CPRE Oxfordshire	The Chiltern Society	
CPRE Surrey	The Holly Lodge Centre	
Clean Air Bayswater	The Royal Parks	
English Heritage		




Appendix 3 – DPE Methodology

DPE Methodology for Design Principle 1

The following slides present the DPE Methodology used to assess each option for PBN Departures, PBN Arrivals and Vectored Arrivals against each Design Principle.

Note:

- PBN Arrivals options are evaluated for the early morning period only
- Evaluation of Vectored Arrivals is not possible for every metric, since more information is required from NATS on the design of Heathrow’s future arrivals mechanism (“holding stacks”)

DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
1. 	N/A	The technical team considers whether the option is likely to: <ul style="list-style-type: none"> • Maintain or improve safety • Require further safety assurances • Result in issues which could be harmful to safety 	Qualitative	Maintains existing level of safety or improves on it.	Expected to maintain the existing level of safety or improve on it. Further safety assurances are required.	Issues identified which could be harmful to safety


DPE Methodology for Design Principle 2 (1 of 2)

DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met	
2.	Safety	DP1 outcome used to evaluate this	Qualitative	DP1 evaluation	DP1 evaluation	DP1 evaluation	
	Integration of diverse airspace users	DP11 outcome used to evaluate this	Qualitative	DP11 evaluation	DP11 evaluation	DP11 evaluation	
	Simplification of airspace, improving efficiency	DP5 outcome used to evaluate this	Qualitative	DP5 evaluation	DP5 evaluation	DP5 evaluation	
	Environmental sustainability	DP2, DP3, and DP4 outcomes used to evaluate this	Qualitative & Quantitative	Evaluated in DP2, DP3 and DP4 and outcome met all three DPs.	Evaluated in DP2, DP3 and DP4 with mixture of Met, Partially Met and Not Met outcome.	Evaluated in DP2, DP3 and DP4 and outcome did not meet the criteria.	
	Overall AMS Evaluation (as required by the CAA)				All 4 AMS outcomes Met	All 4 evaluations Partially Met or mix of Met/Not Met	All 4 AMS outcomes Not Met
	Minimise, and where possible reduce, the total negative impacts on health and wellbeing from aircraft noise and Altitude-based priorities	Evaluate the population exposed to 70dB SEL (for PBN Deps c. 4000ft, PBN & Vectored Arrs c. 5000ft).	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile	
		Number of people overflown (between 0-4000ft, at least once per day on average)	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile	
		Number of people overflown (between 4-7000ft, at least once per day on average)	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile	
Track mileage between runways and points within the network*		Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile		



* Assessment for Vectored Arrivals not possible until we receive additional information from NATS about the design of Heathrow's future holding stacks

DPE Methodology for Design Principle 2 (2 of 2)




DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
	Tranquillity	The area (km ²) of AONBs and National Parks overflown	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		The area (km ²) of Historic Parks and Gardens overflown	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		Overfly Richmond Park at least 20 times per day on average, below 7000ft (PBN Departures options and Vectored Arrivals options). Overfly Richmond Park at least once a day between 0430-0600, below 7000ft (PBN Arrivals options)	Qualitative	Option not expected to overfly Richmond Park 20 times per day for PBN Departures/ Vectored Arrivals options , or at least once a day for PBN Arrivals options	N/A	Option expected to overfly Richmond Park 20 times per day for PBN Departures/ Vectored Arrivals options , or at least once a day for PBN Arrivals options
	Ecology and/or biodiversity	The area (km ²) of SPA, SACs and/or SSSIs overflown below 3000ft	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile.
	Prevent any worsening of air quality, to remain within local authorities' limits	If an option has a change to flightpaths below 1000ft it will be evaluated as 'Partially Met' but requires further analysis to determine the scale of the impact on local air quality. If an option has no change to flightpaths below 1000ft it will be evaluated as 'Met'	Qualitative	Option unlikely to affect local air quality	Option has potential to affect local air quality below 1,000ft.	N/A
Overall DP 2 Evaluation				All evaluations Met	All evaluations Partially Met or a mix of Met/Not Met	All evaluations Not Met

DPE Methodology for Design Principle 3

DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
3.	Continuous Climb Operations (CCO)	CCO to 7000ft assumed for all options	Qualitative	Option has the potential to achieve CCO	Option has the potential to largely achieve CCO but there may be small-trade-offs required	Option is not expected to achieve CCO or significant trade-offs would be required
	Noise Abatement Departure Procedures (NADP) (PBN Departures options)	Application of noise efficient operational practices are to be considered in more detail at Stage 3. If there is anything about the design options that the technical team feel could limit any of these practices, this will be described.	Qualitative	Nothing identified by the technical team to suggest that noise efficient operational practices cannot be applied to the option.	N/A	Aspect identified by the technical team to suggest it might not be possible to apply some noise efficient operational practices to the option.
	Steeper climbs (PBN Departures options)					
	Low Power Low Drag, Landing Gear Deployment, Steeper Approaches (PBN & Vectored Arrivals options)					
Overall DP 3 Evaluation				Both evaluations Met	Mixture of Met, Partially Met and Not Met	Both evaluations Not Met




DPE Methodology for Design Principles 4, 5 and 6


DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
4. 	Reduce the contribution to climate change from CO2 emissions and other greenhouse gas emissions arising from Heathrow's aircraft activities	Consider track length (nautical miles) from runway end to the relevant point in the upper airspace network*	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
5. 	Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines and cargo handlers, passengers and local communities	Technical team input on air traffic control procedures and Heathrow's operation in terms of providing sufficient capacity and resilience to handle demand	Qualitative	Option considered to enhance operational performance and/or resilience, subject to further work	Option considered to maintain operational performance and/or resilience, subject to further work	Option considered to degrade operational performance and/or resilience
6. 	Provide predictable and meaningful respite to those affected by noise from Heathrow's movements	We have identified 3 potential concepts for providing respite or relief from noise. This design principle will be assessed at Stage 3 when system options are developed that include respite concepts.	N/A	N/A at this Stage	N/A at this Stage	N/A at this Stage

* Assessment for Vectored Arrivals not possible until we receive additional information from NATS about the design of Heathrow's future holding stacks

DPE Methodology for Design Principle 7

DP	Detailed Criteria	Approach to Evaluation	Other FASI Airports	Quantitative / Qualitative	Met	Partially Met	Not Met
7.	 <p>Seek to avoid overflying the same communities with multiple routes including those to/from other airports</p>	<p>Technical team consider whether the option would overfly the same communities below 7000ft as nearby airports. The overflight cones of Heathrow's individual options were compared with the airspace design options of other airports accounting for:</p> <ul style="list-style-type: none"> If the sponsor is at Stage 1 (and does not have a Comprehensive List of Options yet) the assessment considers potential interactions with arrival and departure areas, as contained within ACOG's Masterplan Iteration 2; If the sponsor is at Stage 2, the assessment considers their Comprehensive List of Options; If the sponsor is at Stage 3, the assessment considers their shortlisted options. <p>This assessment does not account for interactions within Heathrow's own route options since this assessment will only be possible when we have system options at Stage 3.</p>	RAF Northolt	Qualitative	No overflight of same communities below 7,000ft	N/A	Overflight of same communities below 7,000ft
			Luton		No overflight of same communities below 7,000ft	N/A	Overflight of same communities below 7,000ft
			Stansted		No overflight of same communities below 7,000ft	N/A	Overflight of same communities below 7,000ft
			London City		No overflight of same communities below 7,000ft	N/A	Overflight of same communities below 7,000ft
			Biggin Hill		No overflight of same communities below 7,000ft	N/A	Overflight of same communities below 7,000ft
			Gatwick		No overflight of same communities below 7,000ft	N/A	Overflight of same communities below 7,000ft
			Farnborough		No overflight of same communities below 7,000ft	N/A	Overflight of same communities below 7,000ft
			Southampton		No overflight of same communities below 7,000ft	N/A	Overflight of same communities below 7,000ft
			Overall DP 7 Evaluation				

DPE Methodology for Design Principle 8


DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
8. 	Contribute to minimising the negative impacts of night flights	We have identified 3 potential concepts for minimising the negative impacts of night flights. This design principle will be assessed at Stage 3 when system options are developed.	N/A	N/A at this Stage	N/A at this Stage	N/A at this Stage

DPE Methodology for Design Principle 9


DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
9.	 Keep the number of people who experience an increase in noise from the future airspace design to a minimum	Population number within the 70dB SEL	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		Population overflown below 7000ft at least once a day/night on average*		Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		Population overflown below 7000ft at least 20 times a day/night on average*		Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		Number of people who are potentially newly overflown at least 20 times a day on average compared to 2019 (PBN Departures options)		Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		Number of people who are potentially newly overflown at least once during 0430-0600 period on average (PBN Arrivals options)		Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile
		Overall DP 9 Evaluation		All 4 evaluations Met	All 4 evaluations Partially Met, or a Mixture of Met and Not Met	All 4 evaluations Not Met

*For Vectored Arrivals we have assumed that the population within the reduced vectoring size of swathe would be overflown at least 20 times per day since the reduced swathe will lead to increased concentration of overflight

DPE Methodology for Design Principle 10


DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
10. 	Keep the total number of people who experience noise from the future airspace design to a minimum	Population number within the 70dB SEL	Quantitative	Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile.
		Population overflown below 7000ft at least once a day		Within lowest 25 th percentile	Within middle 50 th percentile	Within highest 25 th percentile.
	Overall DP 10 Evaluation				Both evaluations Met	Both evaluations Partially Met, or a Mixture of Met and Not Met

DPE Methodology for Design Principle 11 (1 of 2)

DP	Detailed Criteria	Approach to Evaluation	Other FASI Airports	Quantitative / Qualitative	Met	Partially Met	Not Met
 11. Enable the efficiency of other airspace users' operations: Other FASI Airports		Technical team considers whether the option could restrict CCO/CDO to/from 7000ft for nearby airports For PBN arrivals options , this assessment considers the operating hours of the adjacent airports For Vectored arrivals options , we assume continuous descent from the future stacks*	RAF Northolt	Qualitative	Option does not restrict CCO/CDO to/from other airports options	N/A	Option may restrict CCO/CDO to/from other airports options
			Luton		Option does not restrict CCO/CDO to/from other airports options	N/A	Option may restrict CCO/CDO to/from other airports options
			Stansted		Option does not restrict CCO/CDO to/from other airports options	N/A	Option may restrict CCO/CDO to/from other airports options
			London City		Option does not restrict CCO/CDO to/from other airports options	N/A	Option may restrict CCO/CDO to/from other airports options
			Biggin Hill		Option does not restrict CCO/CDO to/from other airports options	N/A	Option may restrict CCO/CDO to/from other airports options
			Gatwick		Option does not restrict CCO/CDO to/from other airports options	N/A	Option may restrict CCO/CDO to/from other airports options
			Farnborough		Option does not restrict CCO/CDO to/from other airports options	N/A	Option may restrict CCO/CDO to/from other airports options
			Southampton		Option does not restrict CCO/CDO to/from other airports options	N/A	Option may restrict CCO/CDO to/from other airports options

*We do not yet know locations or heights of future holding stacks, or the aircraft profiles from these stacks to Heathrow's runways, but the aspiration of both Heathrow and NATS is for higher holding facilities. Higher holding stacks at Heathrow should enable improved CCO/CDO for some other airports.

DPE Methodology for Design Principle 11 (2 of 2)

DP	Detailed Criteria	Approach to Evaluation	Quantitative / Qualitative	Met	Partially Met	Not Met
11. 	General Aviation	Technical team considers whether any changes to existing controlled airspace (CAS) may be required	Qualitative	Option not expected to require any additional CAS	Option may require additional CAS, further work required	Option requires additional CAS
	Military	Technical team considers whether the option is expected to impact defence and security objectives set by the Ministry of Defence	Qualitative	Option not expected to affect defence and security objectives	N/A	Option expected to impact defence and security objectives
	Helicopters	Technical team considers whether existing helicopter routes could be impacted	Qualitative	Option not expected to impact existing helicopter routes	Option may impact existing helicopter routes, further work required	Option will impact existing helicopter routes: further work required
	Overall DP11 Evaluation				All 11 evaluations Met	A mixture of Fully and Not Met

DPE Methodology for Design Principle 12

DP	Detailed Criteria	Approach to Evaluation	Future Change	Quantitative / Qualitative	Met	Partially Met	Not Met
12.	Minimise the impact to all stakeholders from future changes to Heathrow's airspace	Technical team considers whether the option is compatible with known, conceptual or paused future changes to Heathrow's airspace	Easterly Alternation (known)	Qualitative	Option may be compatible with the future change	Unclear if option is compatible with the future change	Option is not compatible with the future change
			Advanced Air Mobility (AAM) (concept)		Option may be compatible with future changes	Unclear if option is compatible with future changes	Option is not compatible with future changes
			Heathrow's Third Runway (paused)		Option may be compatible with potential future change	Unclear if option is compatible with potential future change	Option is not compatible with potential future change
		Overall DP12 Evaluation				All 3 evaluations Met	All 3 evaluations Partially Met or a mixture of Fully, Partially and Not Met

March 2023

An aerial photograph of Heathrow Airport at dusk. The terminal buildings are illuminated from within, and the sky is a mix of orange, pink, and blue. In the foreground, there are various airport buildings, a tall air traffic control tower, and a large aircraft on the tarmac. The overall scene is a busy airport at the end of the day.

Airspace Modernisation: Airspace Change Proposal Step 2A Engagement on Design Principle Evaluation – Appendix

DISCLAIMER:

The information contained within this document does not constitute a formal company position and does not necessarily reflect a final view.

It is provided to you to facilitate discussions with Heathrow Airport and feedback on our developing proposals. The incomplete and preliminary nature of the information should be recognised when reviewing this material.

Heathrow Airport Limited will not accept or assume any responsibility or liability for the accuracy or correctness of the information or of any figures provided, or any assumptions that may be drawn from them. All route options shown are for discussion only.

This information is intended for your sole purpose, is confidential and should not be shared outside your organisation or with any third party without the express consent of Heathrow Airport Limited.

Heathrow will submit a formal submission that will be publicly available on the CAA Airspace Change Portal in 2023.

All 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, our Design Principles, our appraisals and stakeholder engagement and consultation.

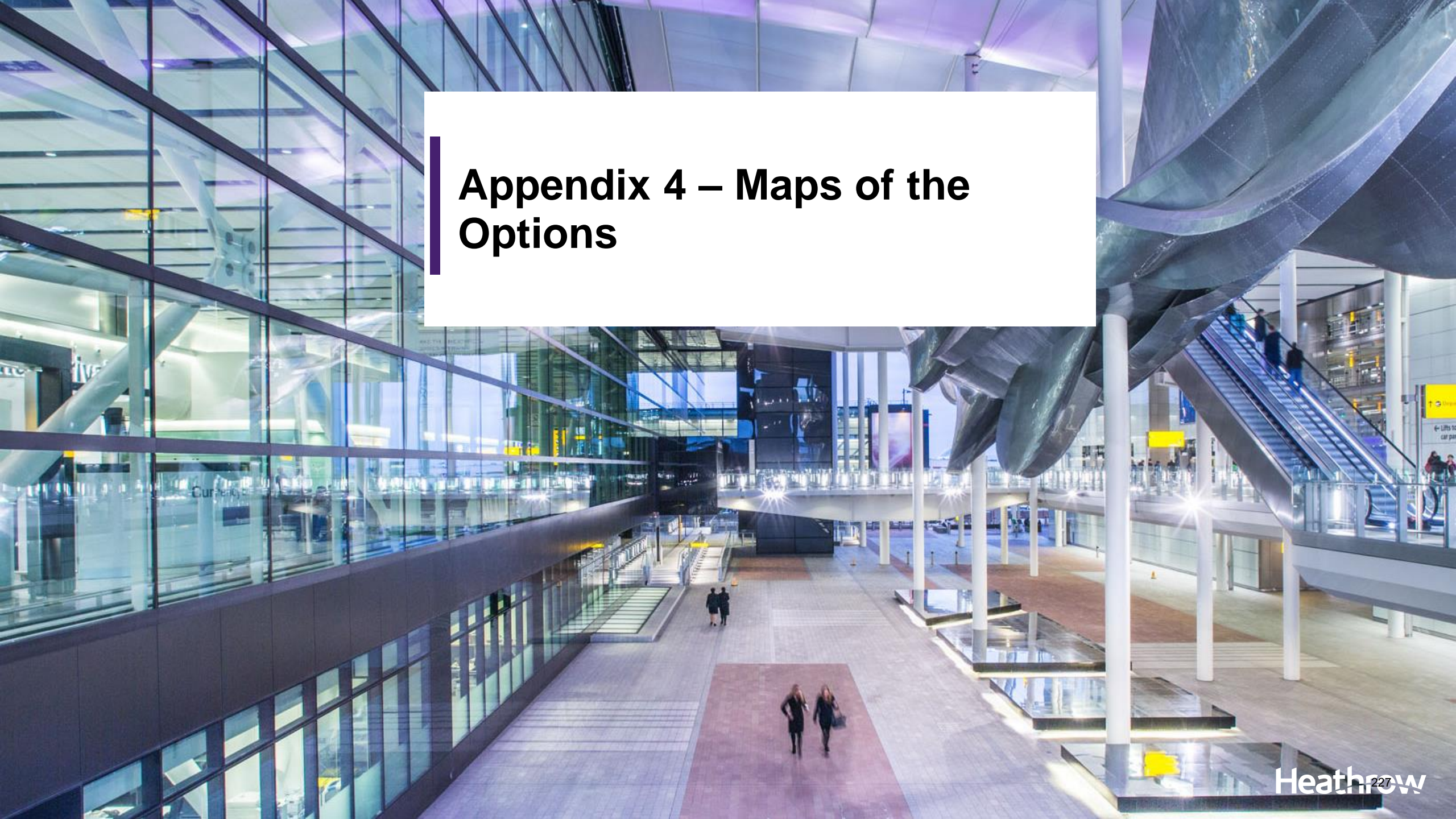




Contents:

Appendix 4: Maps of the Options

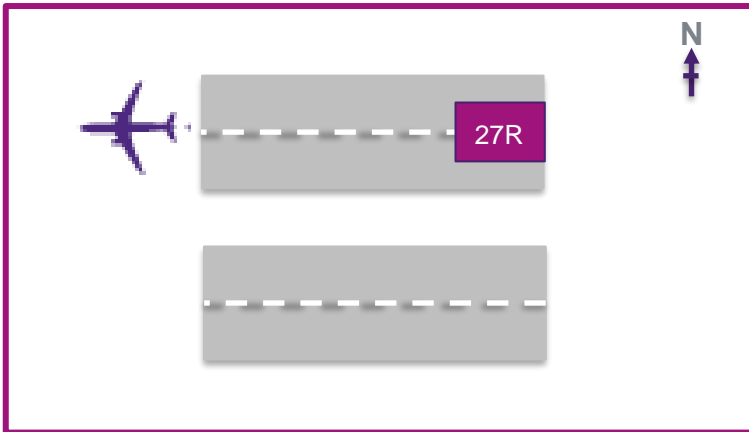
Appendix 5: Design Principle Evaluation: Summary Tables



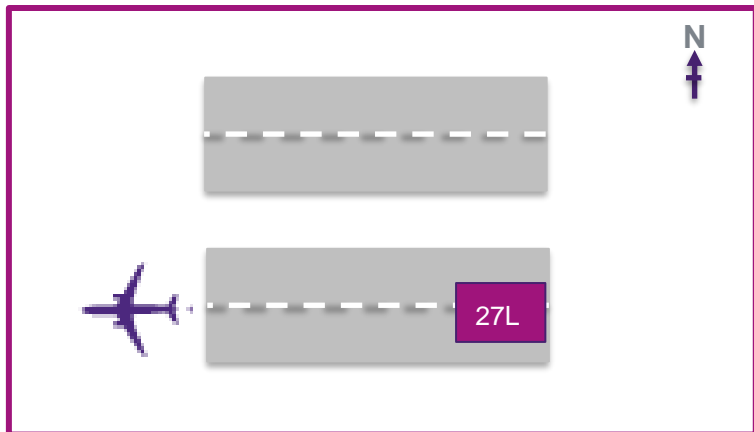
Appendix 4 – Maps of the Options

Runway names for PBN Departure options

WESTERLY OPERATIONS



27R = Aircraft departing the Northern runway to the west



27L = Aircraft departing the Southern runway to the west

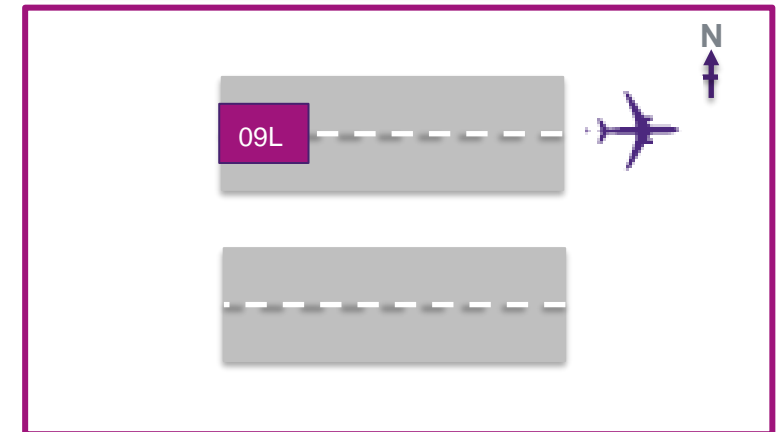


When the wind blows from the west, Heathrow will generally operate on "westerly operations". This is approximately 70% of the time.

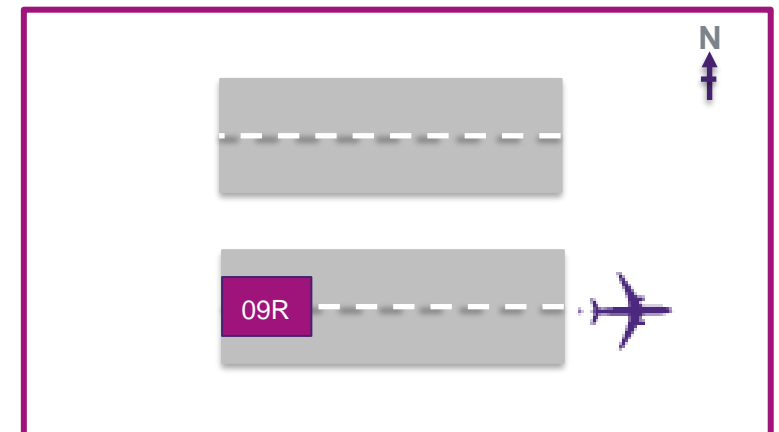


When the wind blows from the east, Heathrow will generally operate on "easterly operations". This is approximately 30% of the time.

EASTERLY OPERATIONS

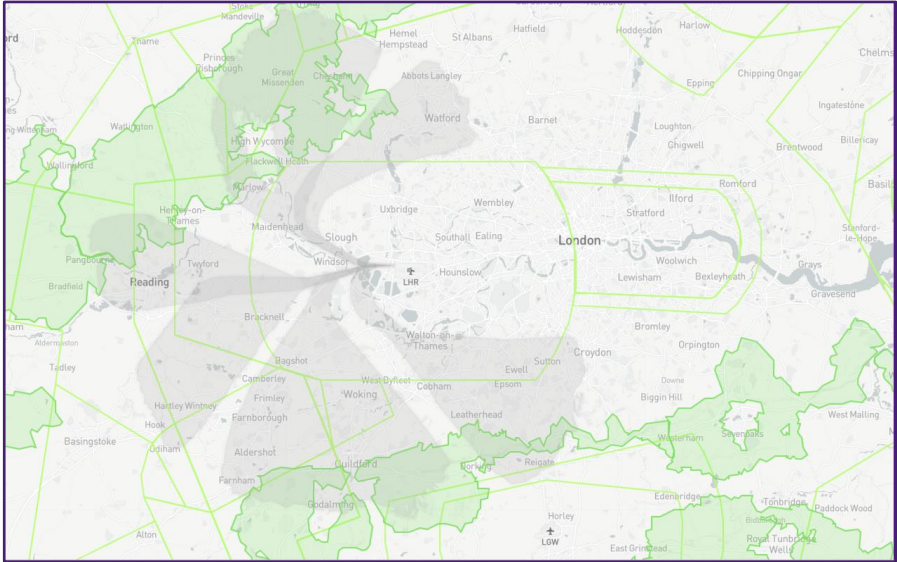


09L = Aircraft departing the Northern runway to the east

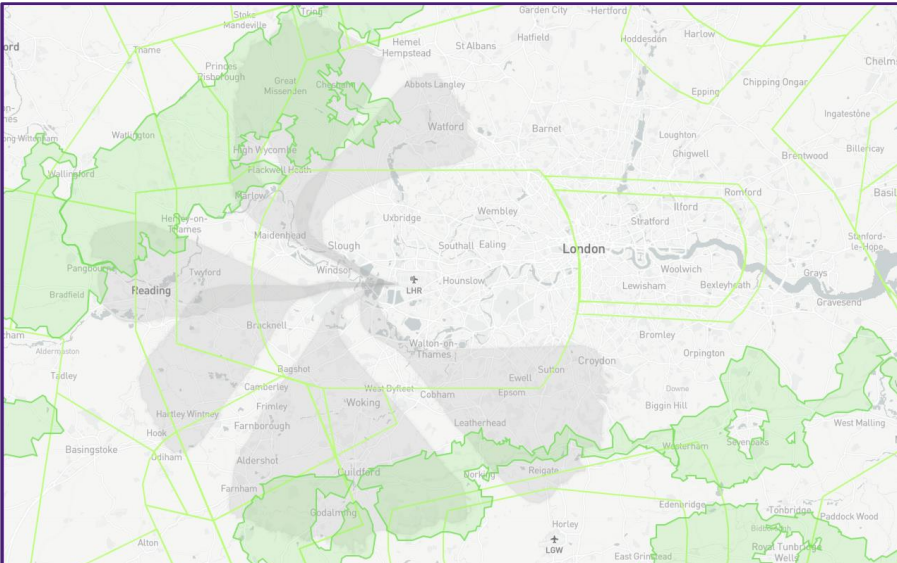


09R = Aircraft departing the Southern runway to the east

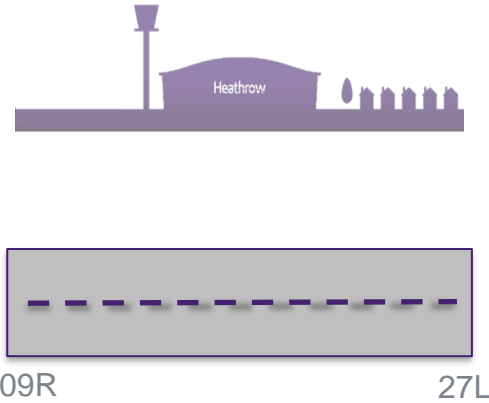
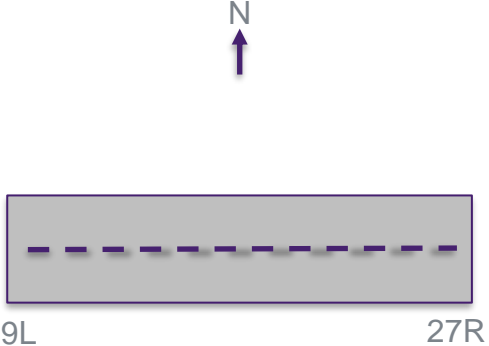
Departures: 'Do nothing' options



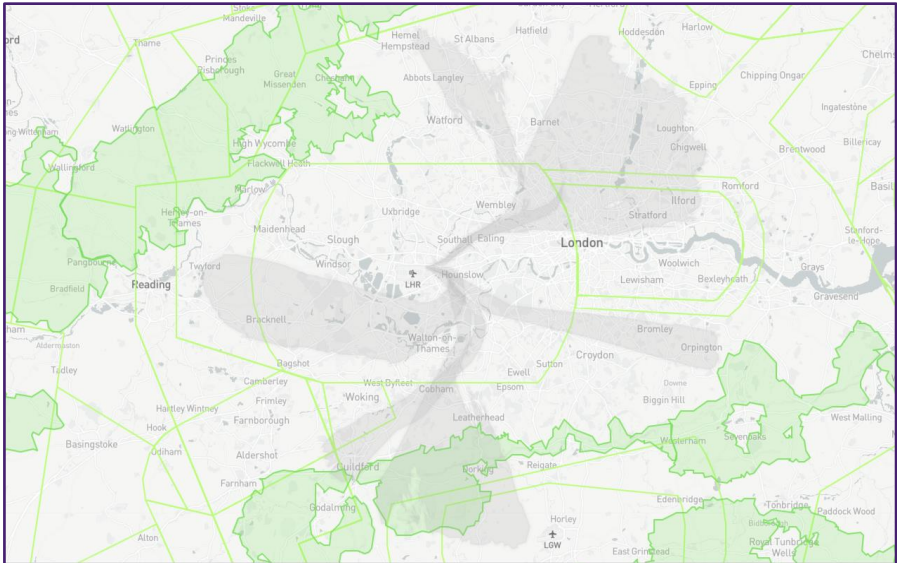
27R Departures for "Do-nothing" option



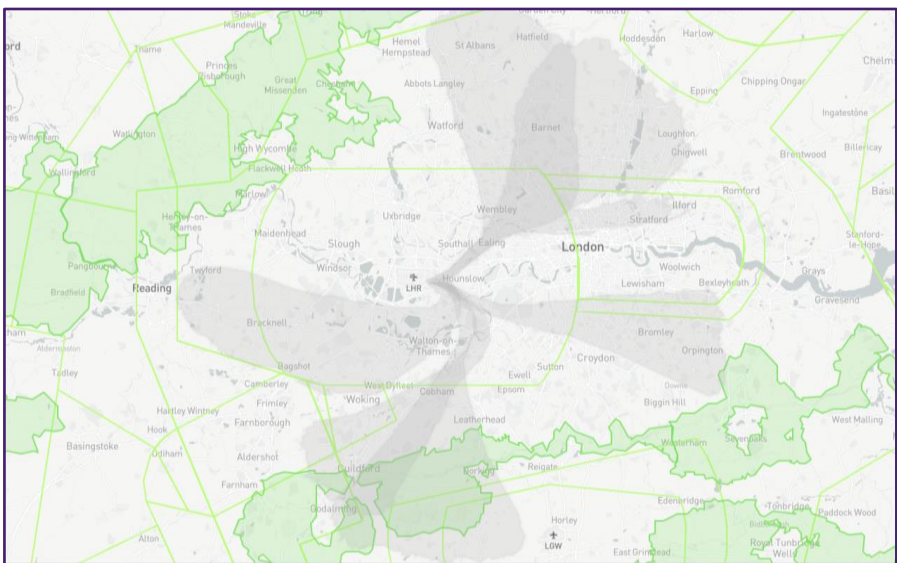
27L Departures for "Do-nothing" option



These options reflect the current airspace design and operation. These options do not use PBN.

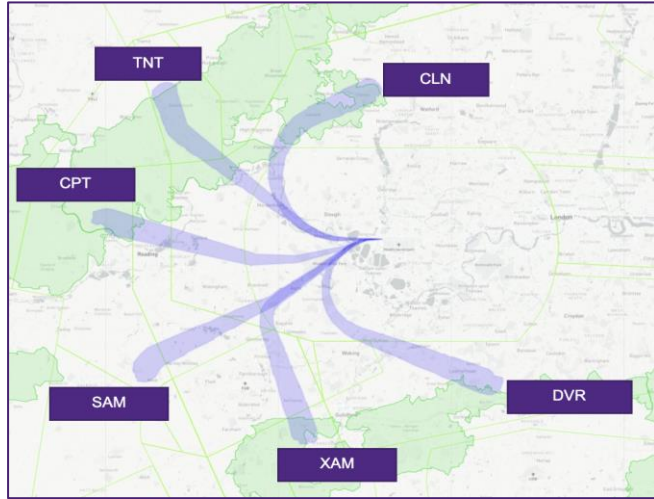


09L Departures for "Do-nothing" option

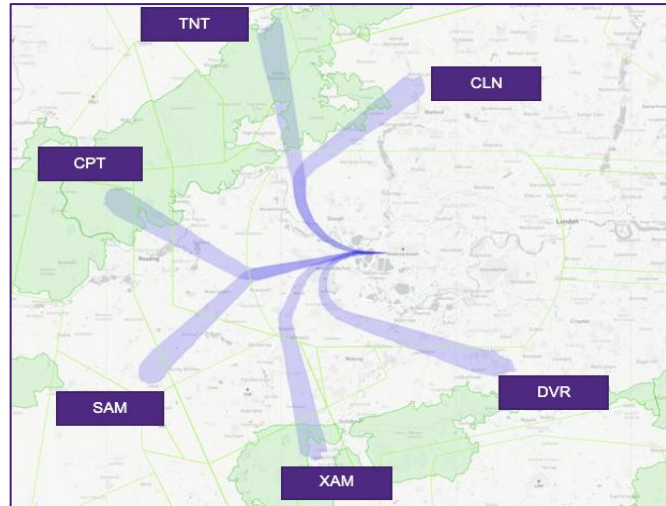


09R Departures for "Do-nothing" option

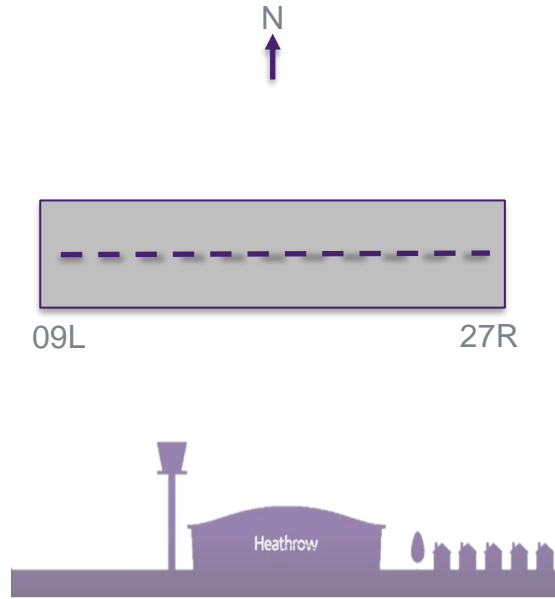
PBN Departure Options created for Design Principle 2



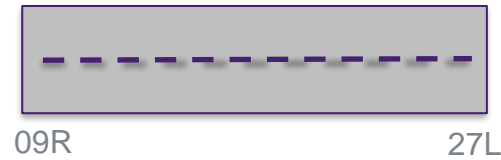
27R Option A for Design Principle 2



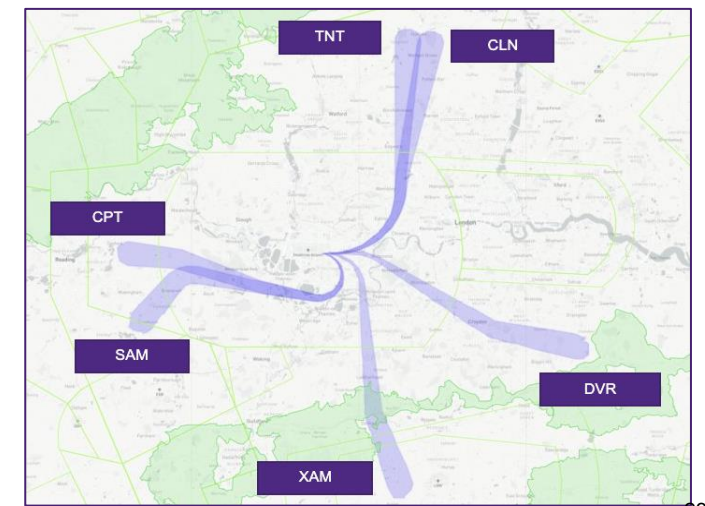
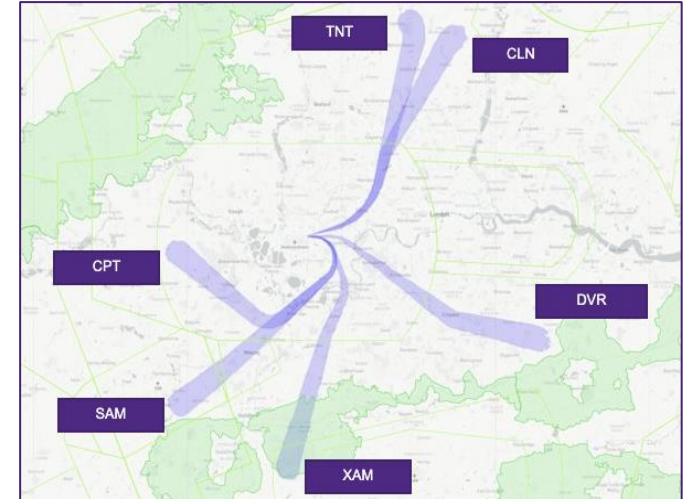
27L Option A for Design Principle 2



09L Option A for Design Principle 2

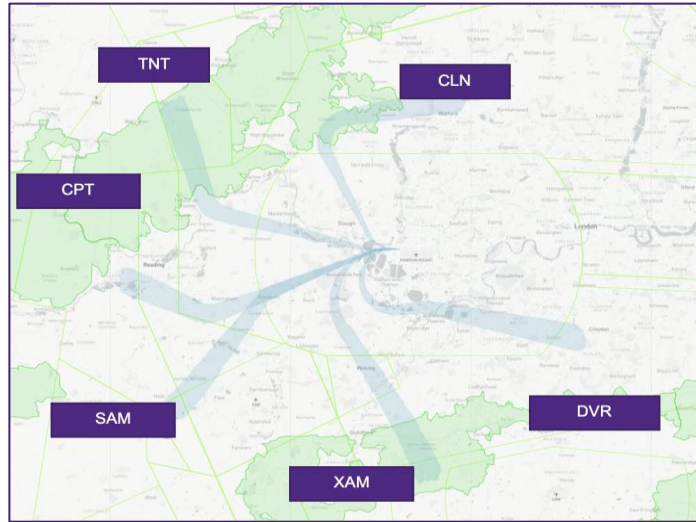


These options were designed to minimise the number of people exposed to noise up to 7,000ft whilst also considering CO₂ and AONBs

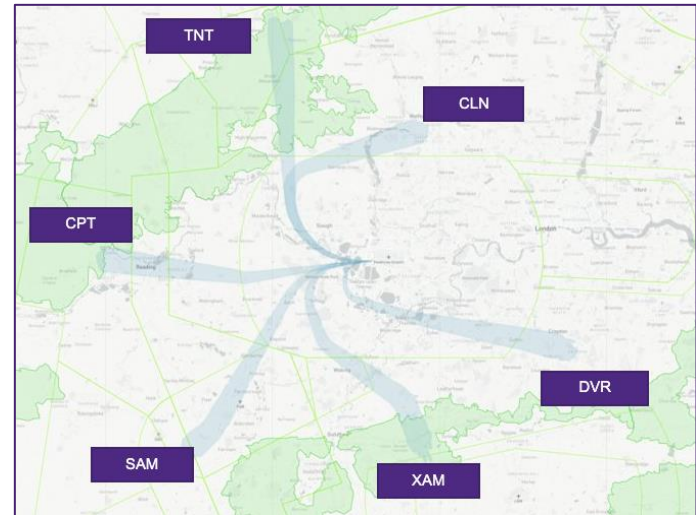


09R Option A for Design Principle 2

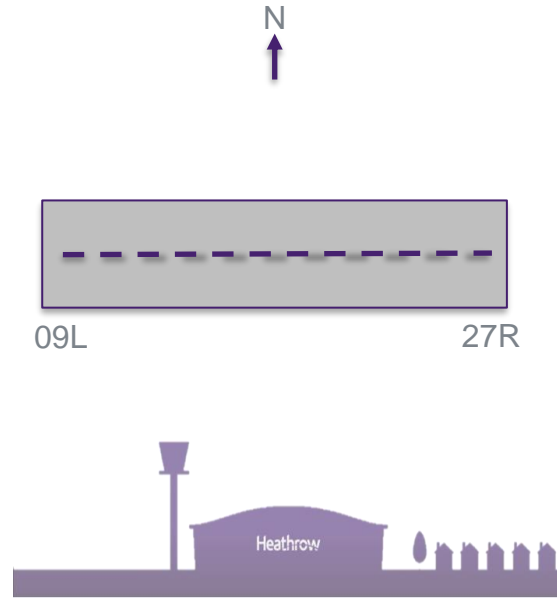
PBN Departure Options created for Design Principle 2 (a)



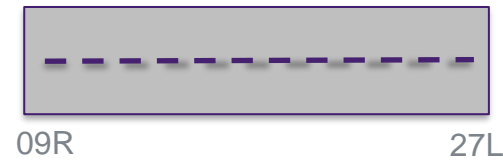
27R Option B for Design Principle 2 (a)



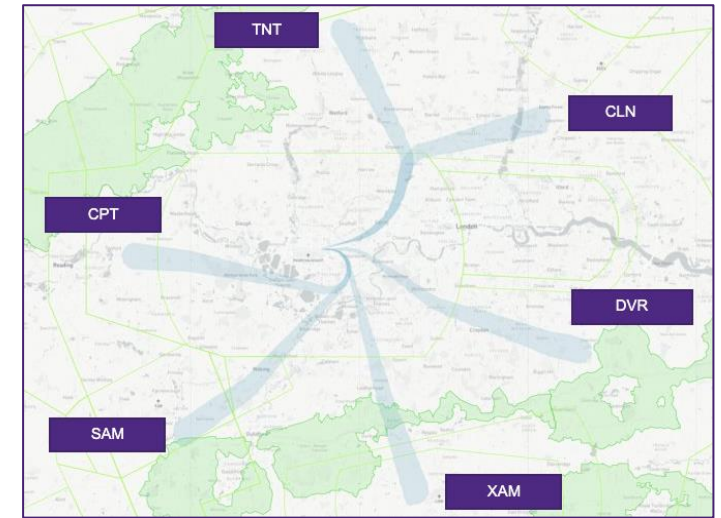
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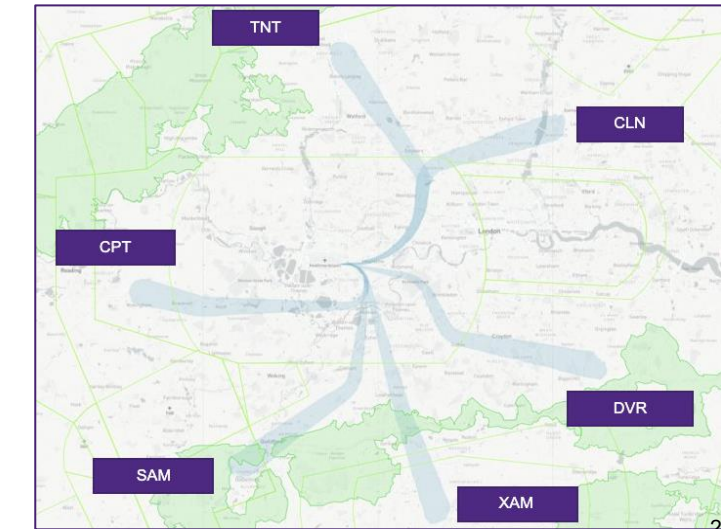
09L Option B for Design Principle 2 (a)



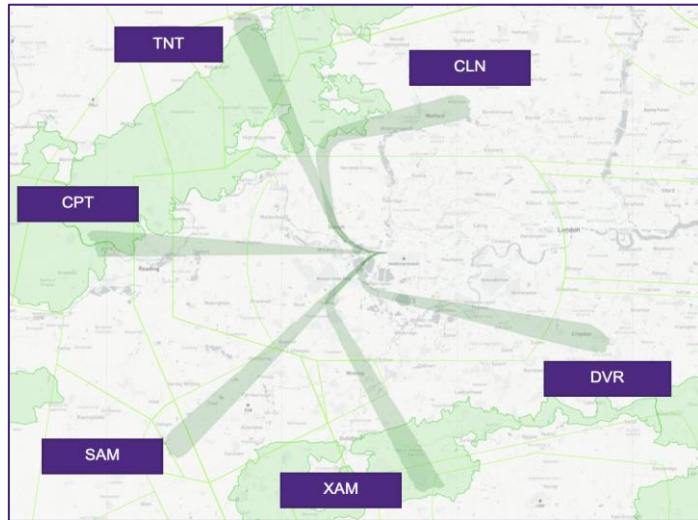
These options were designed to minimise the number of people exposed to noise up to 4,000ft and then minimise track miles from 4,000ft



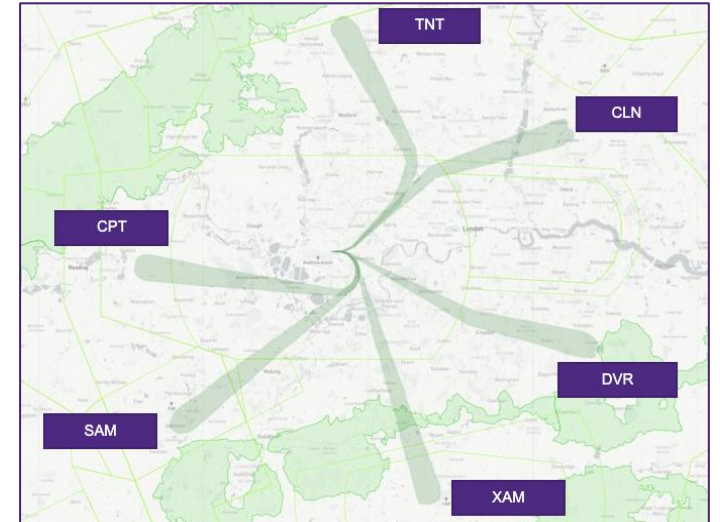
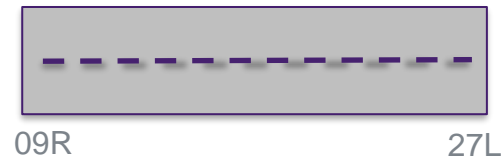
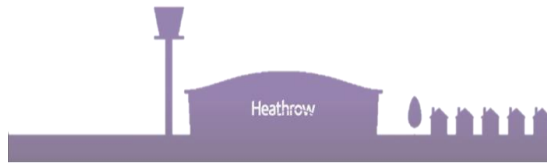
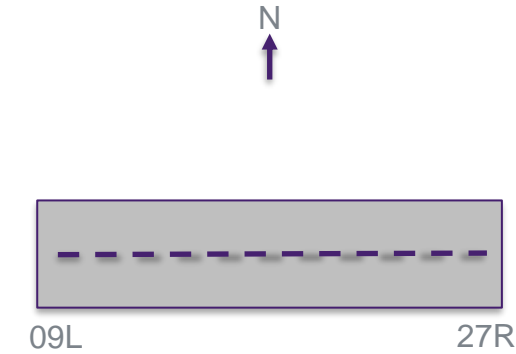
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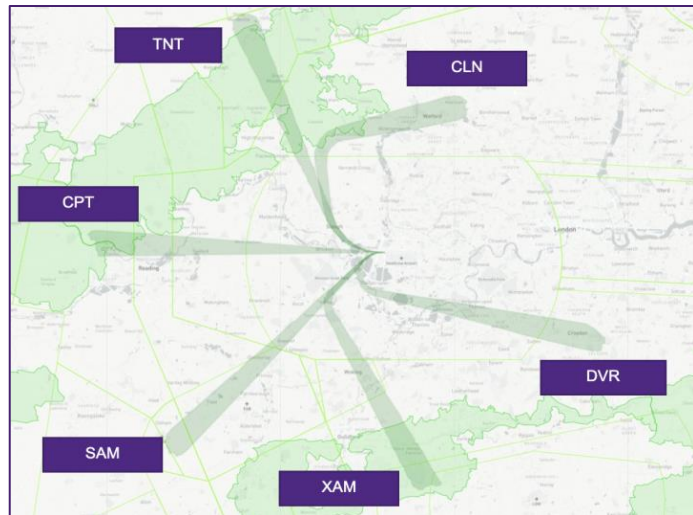
PBN Departure Options created for Design Principle 4



27R Option C for Design Principle 4

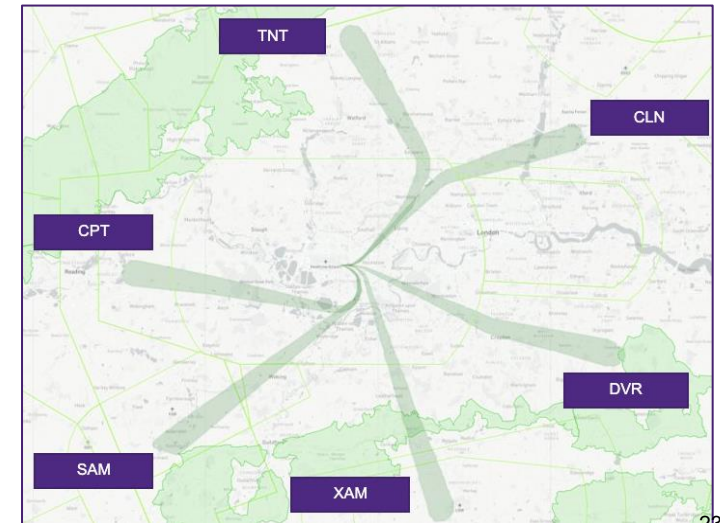


09L Option C for Design Principle 4



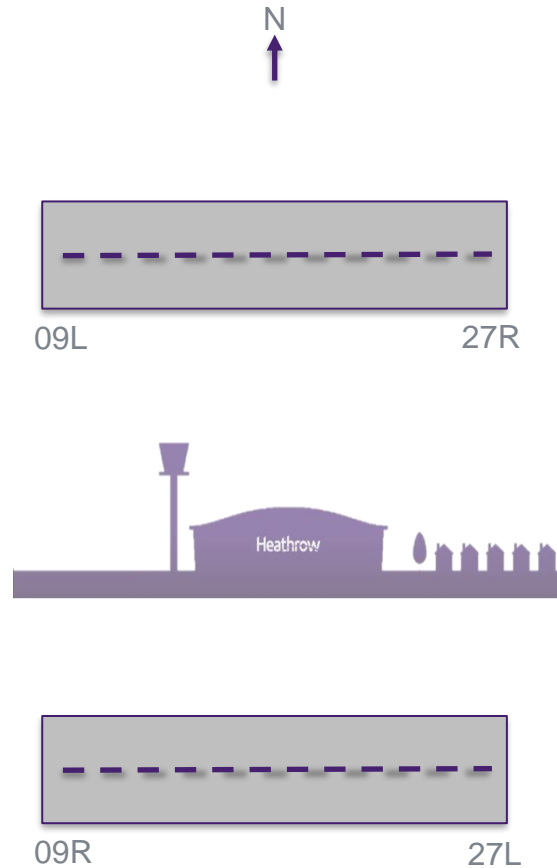
27L Option C for Design Principle 4

These options were designed to minimise the number of track miles flown

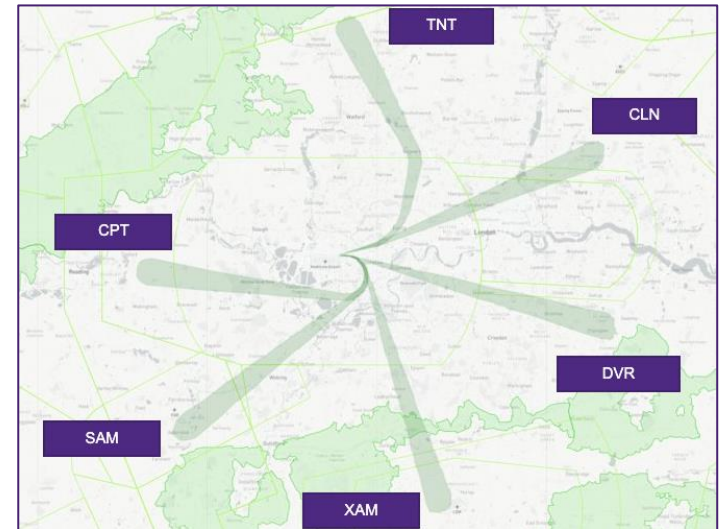


09R Option C for Design Principle 4

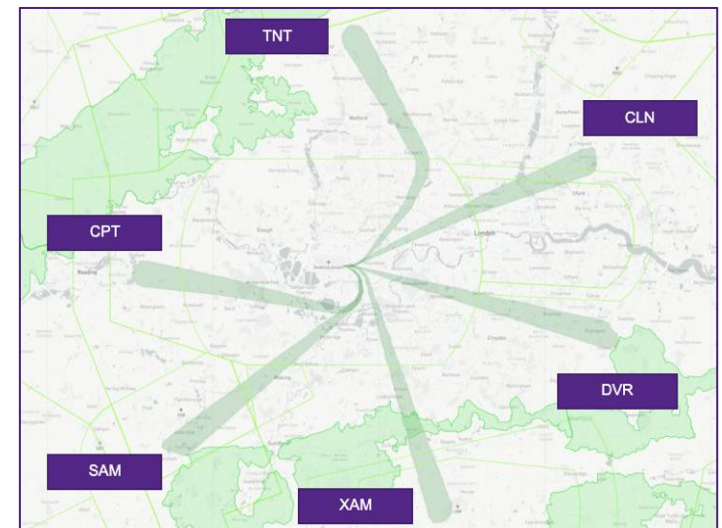
PBN Departure Options created for Design Principle 4 (a)



These options were designed to minimise the number of track miles flown. It is a refinement to Option C, which would require a slightly higher climb gradient to avoid London City.

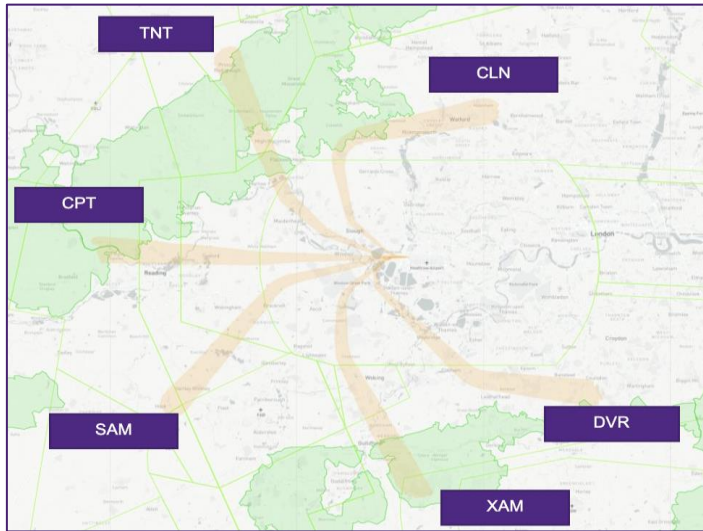


09L Option D for Design Principle 4 (a)

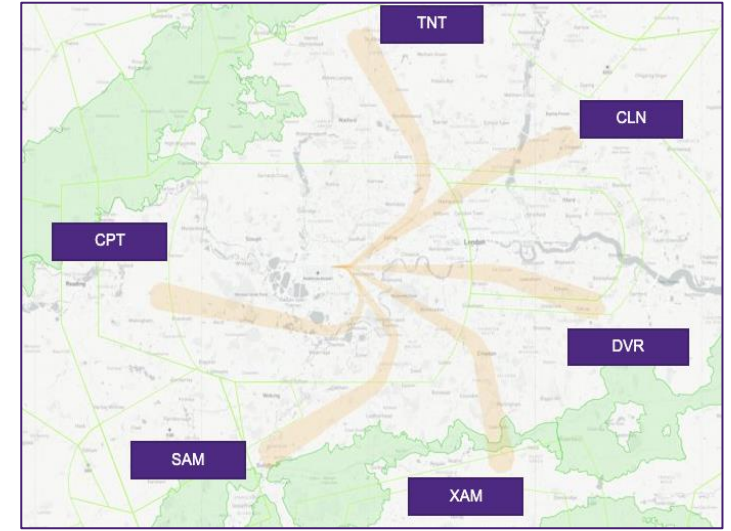


09R Option D for Design Principle 4 (a)

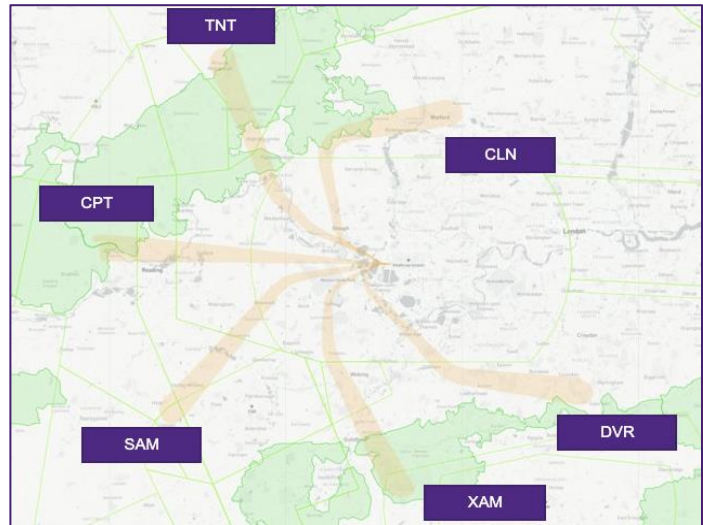
PBN Departure Options created for Design Principle 5



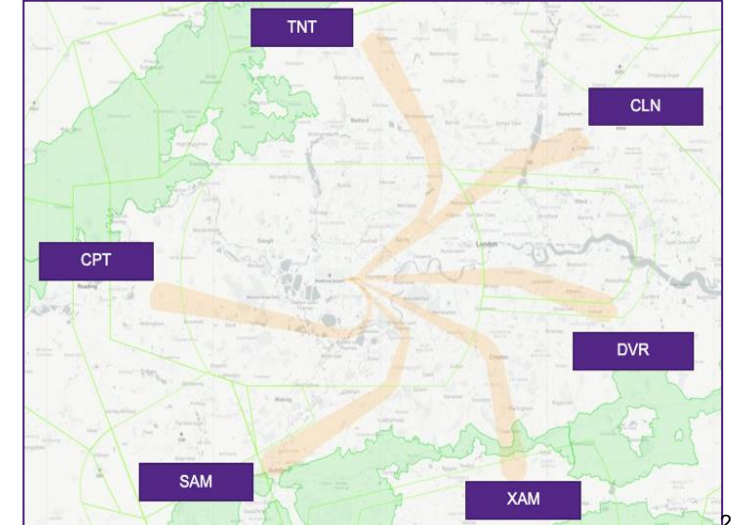
27R Option D for Design Principle 5



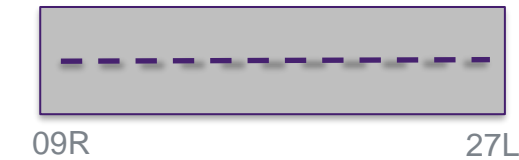
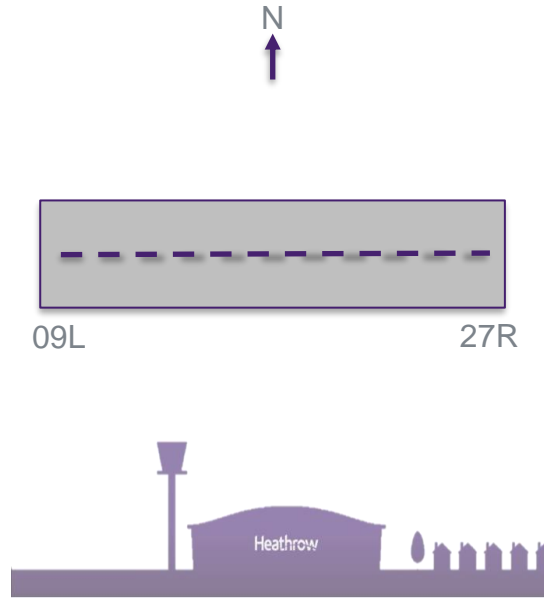
09L Option E for Design Principle 5



27L Option D for Design Principle 5

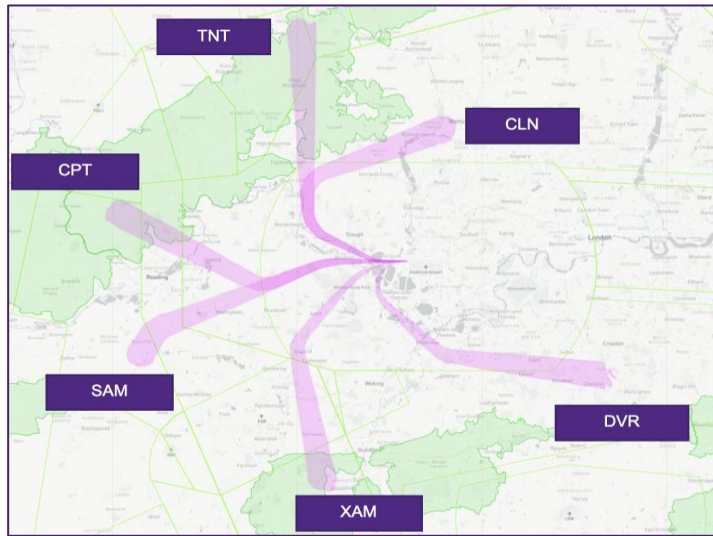


09R Option E for Design Principle 5

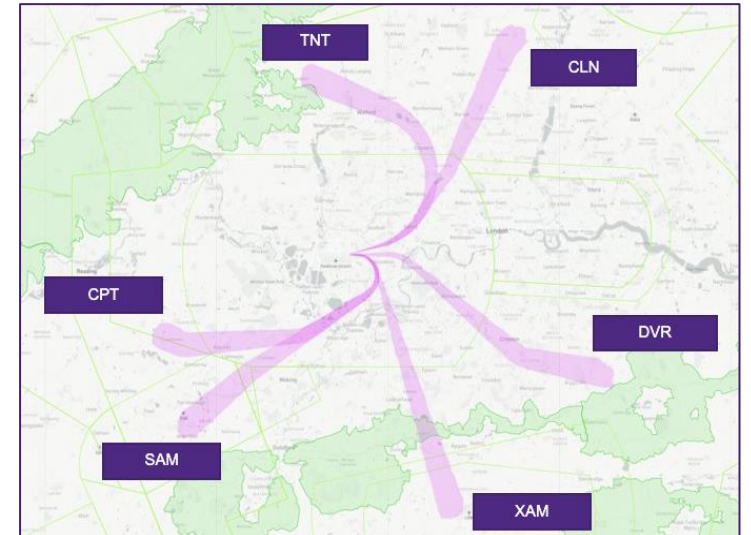


These options were designed to maximise departure efficiency

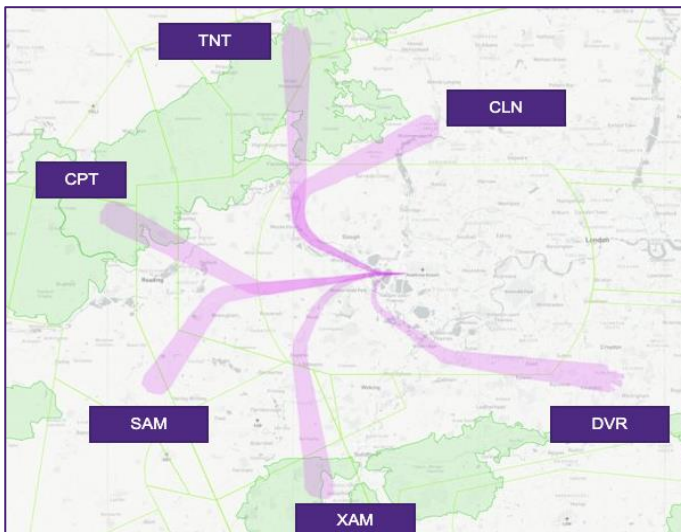
PBN Departure Options created for Design Principle 9



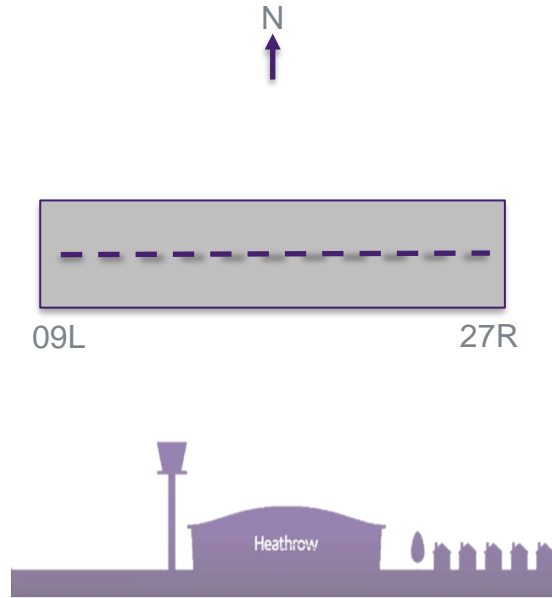
27R Option E for Design Principle 9



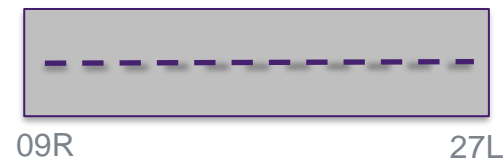
09L Option F for Design Principle 9



27L Option E for Design Principle 9



09L 27R



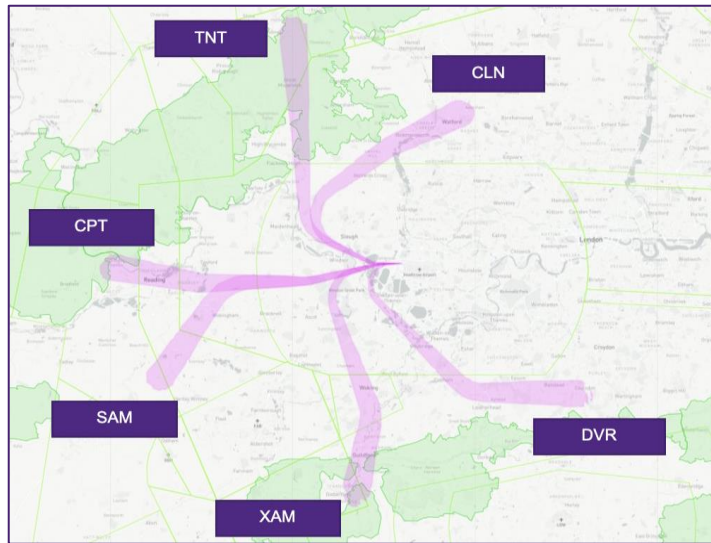
09R 27L

These options were designed to minimise the number of people who experience an increase in noise

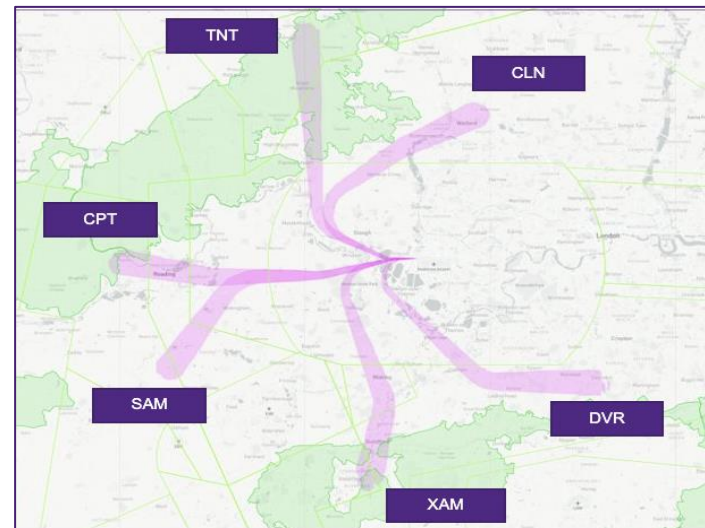


09R Option F for Design Principle 9

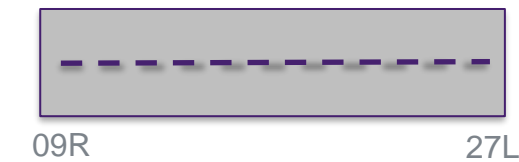
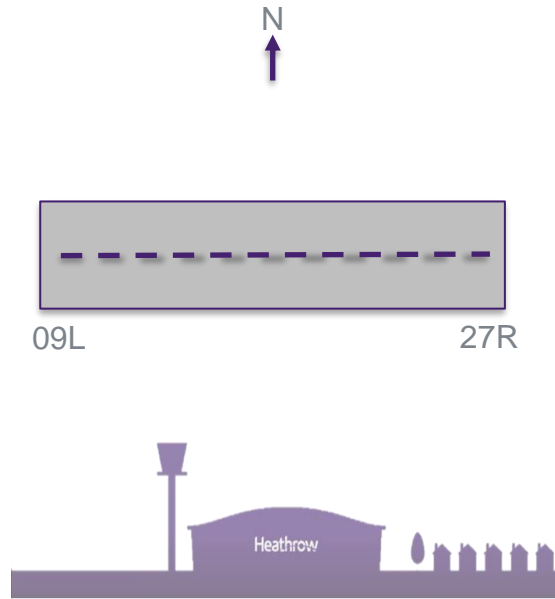
PBN Departure Options created for Design Principle 9 (a)



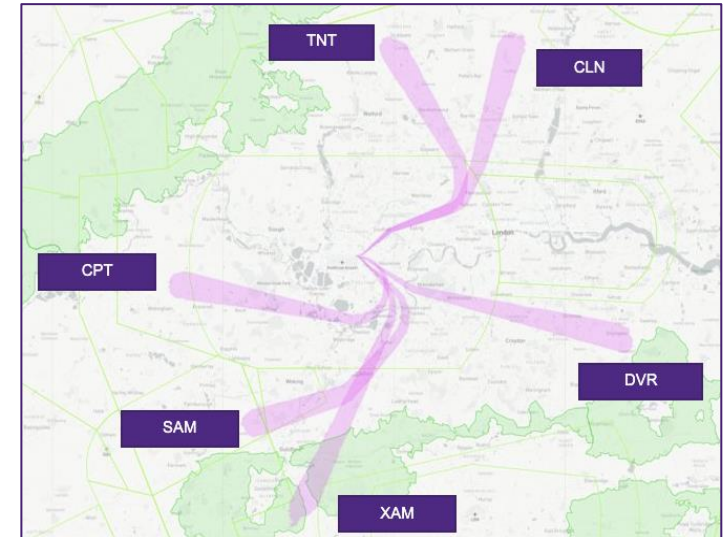
27R Option F for Design Principle 9 (a)



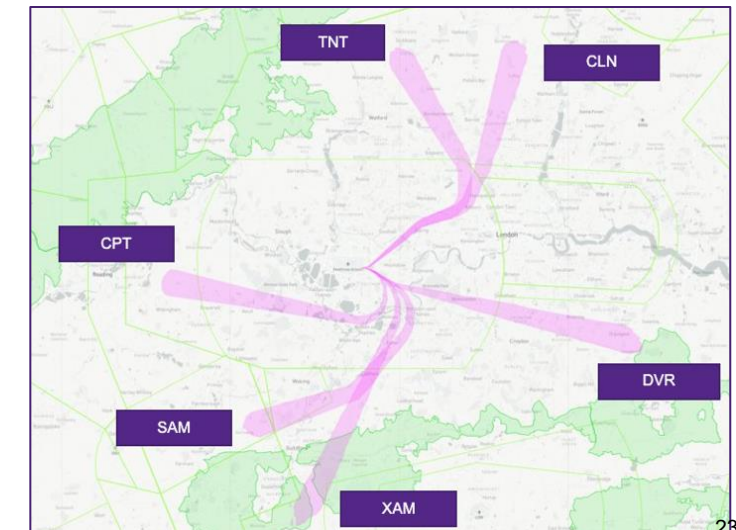
27L Option F for Design Principle 9 (a)



These options are the existing SID centrelines to minimise the number of people who experience an increase in noise

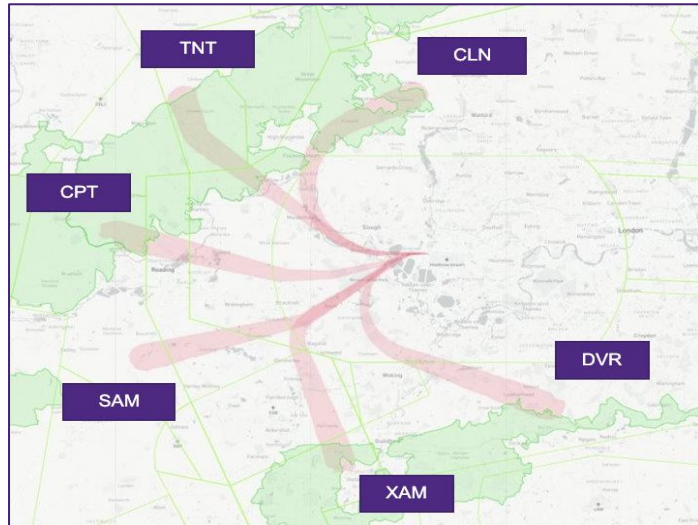


09L Option G for Design Principle 9 (a)

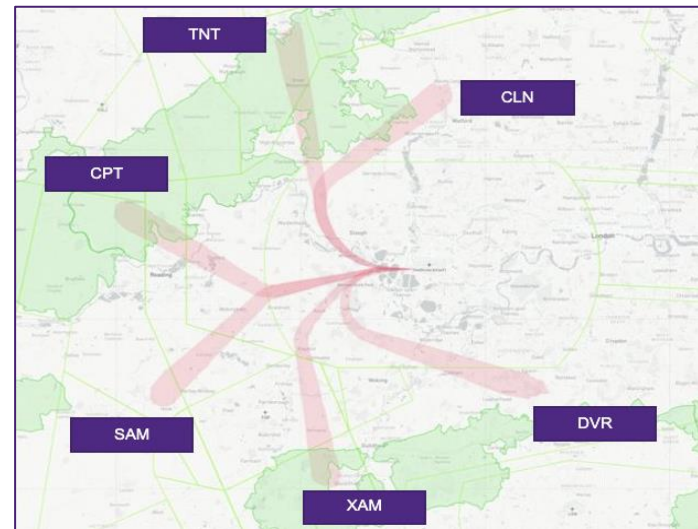


09R Option G for Design Principle 9 (a)

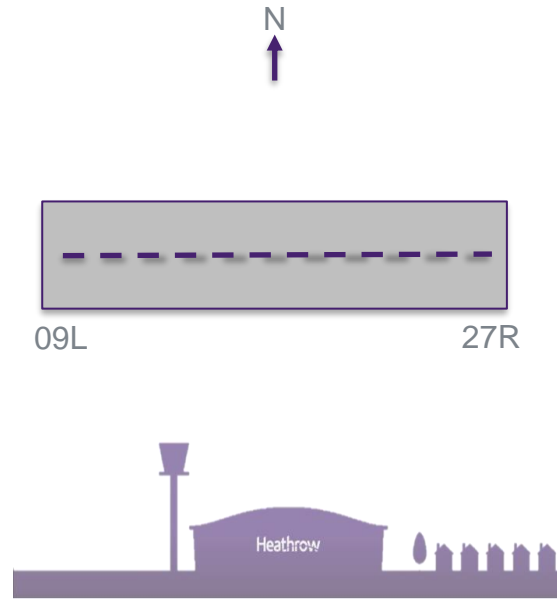
PBN Departure Options created for Design Principle 10



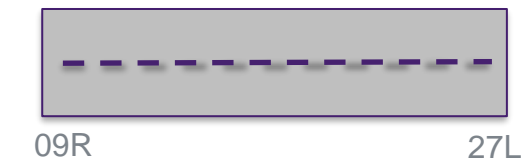
27R Option G for Design Principle 10



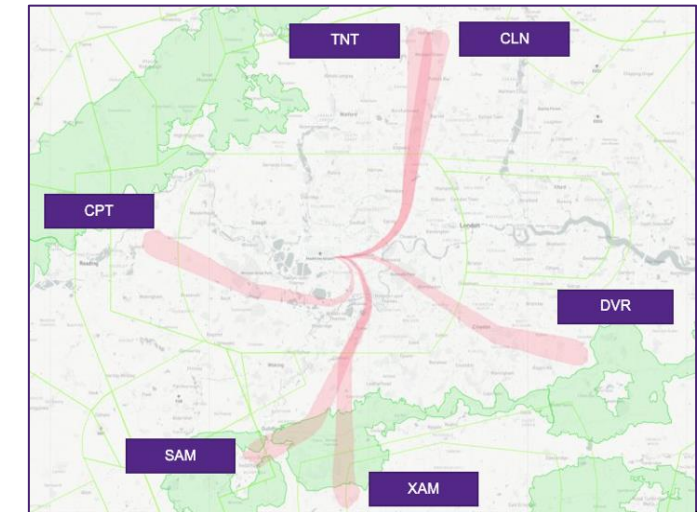
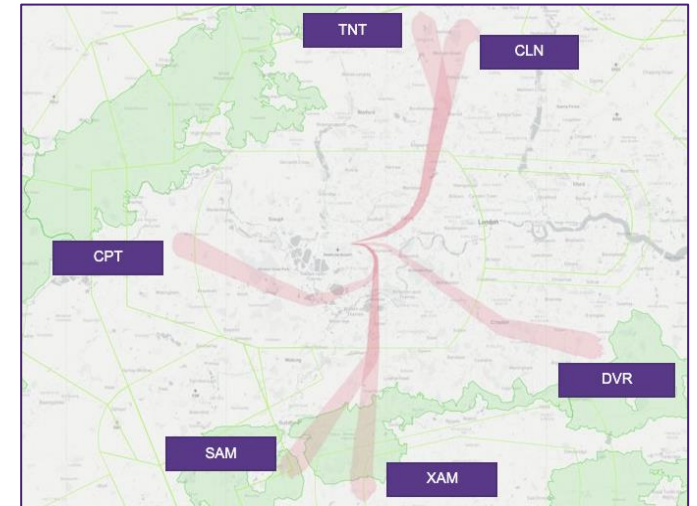
27L Option G for Design Principle 10



09L Option H for Design Principle 10

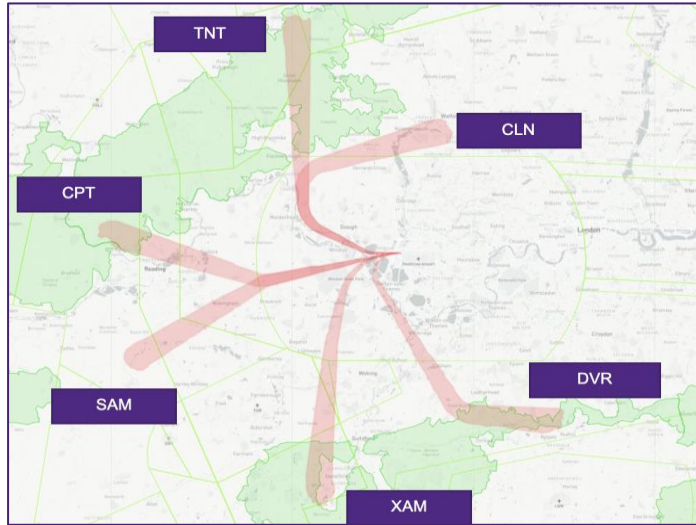


These options were designed to minimise the number of people exposed to noise up to 7,000ft.

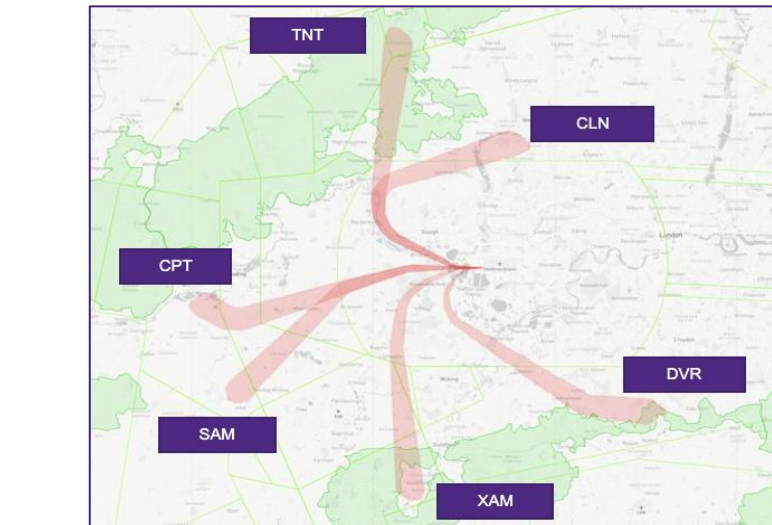
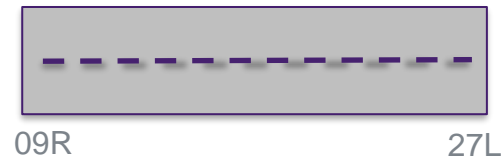
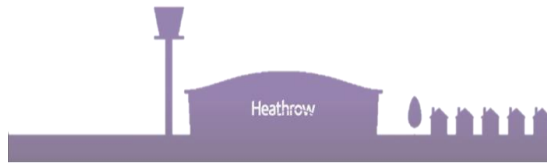
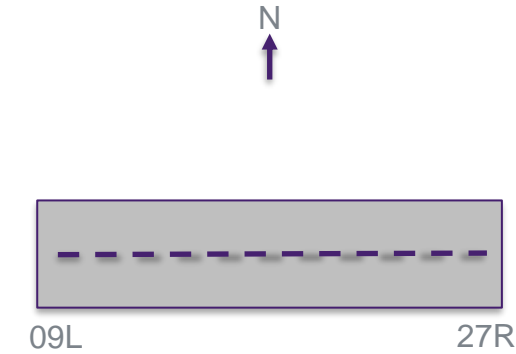


09R Option H for Design Principle 10

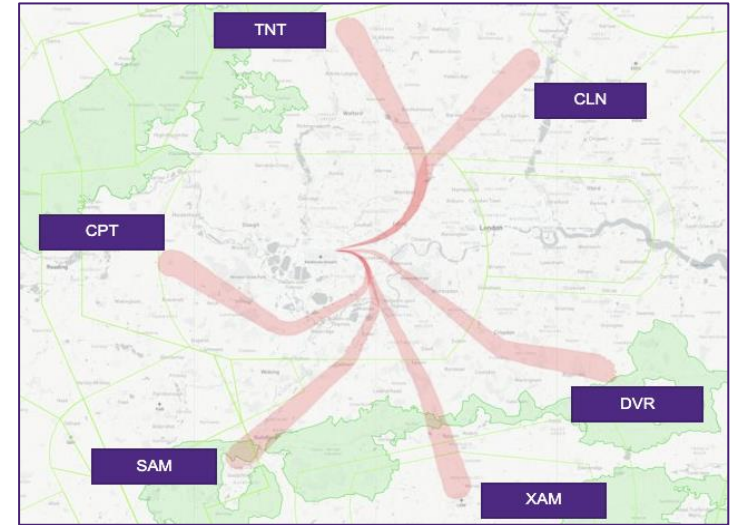
PBN Departure Options created for blend of Design Principles 2, 4, 9 and 10



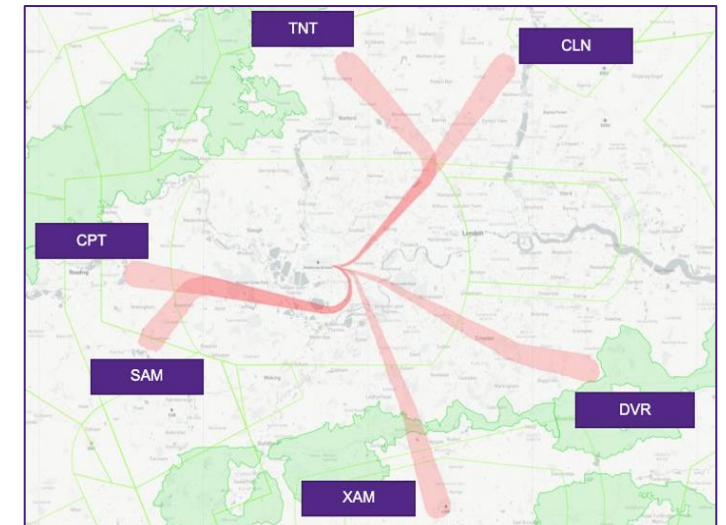
27R Option H for blend of Design Principles 2, 4, 9, and 10



27L Option H for blend of Design Principles 2, 4, 9, and 10



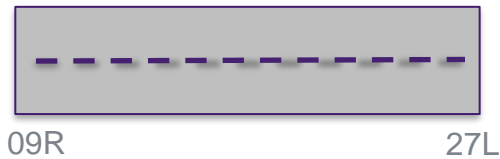
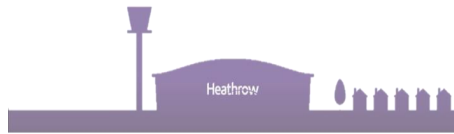
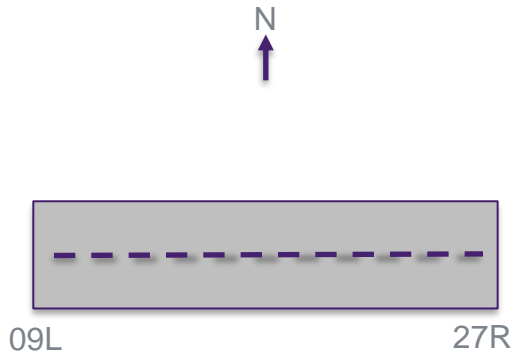
09L Option I for blend of Design Principles 2, 4, 9, and 10



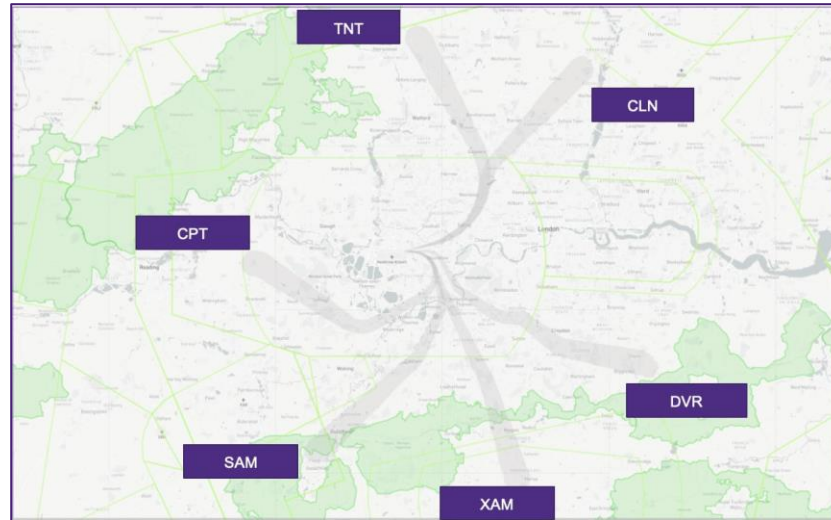
09R Option I for blend of Design Principles 2, 4, 9, and 10

These options were designed to balance population numbers, newly overflow, CO₂ and AONBs

New PBN Departure Option J: “Avoid Richmond Park” option



These options were designed to avoid Richmond Park based on stakeholder feedback.



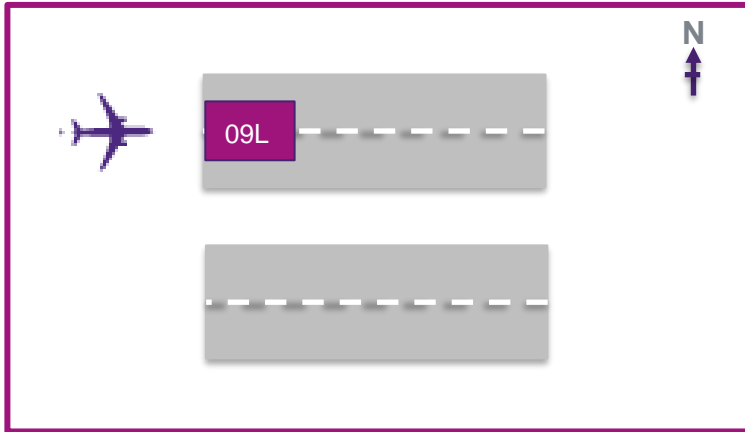
09L Option J based on Option I, adjusted to avoid Richmond Park



09R Option J based on Option I, adjusted to avoid Richmond Park

Runway names for all Arrivals options

EASTERLY OPERATIONS



09L = Aircraft approaching the Northern runway from the west

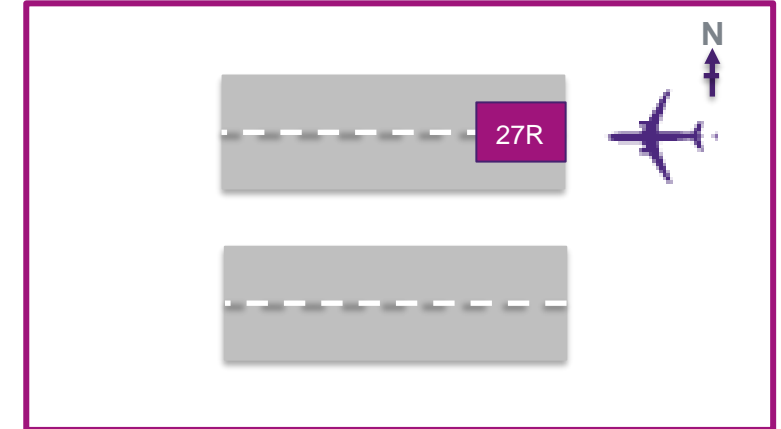


When the wind blows from the west, Heathrow will generally operate on "westerly operations". This is approximately 70% of the time.

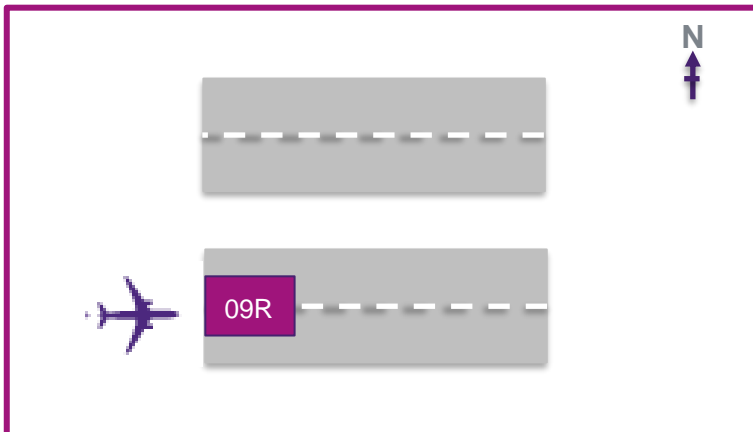


When the wind blows from the east, Heathrow will generally operate on "easterly operations". This is approximately 30% of the time.

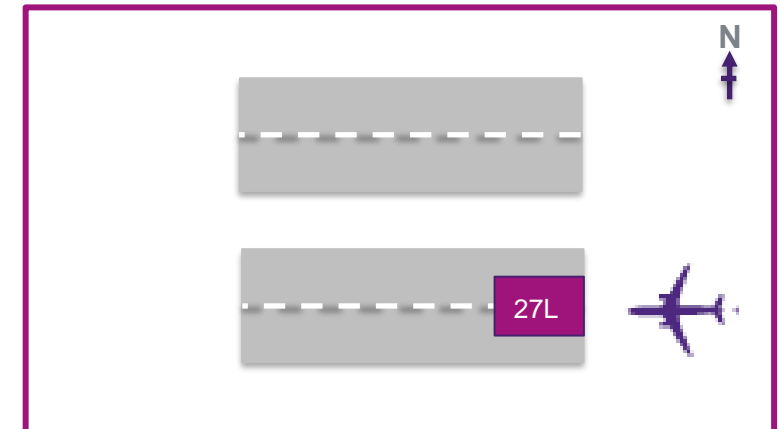
WESTERLY OPERATIONS



27R = Aircraft approaching the Northern runway from the east

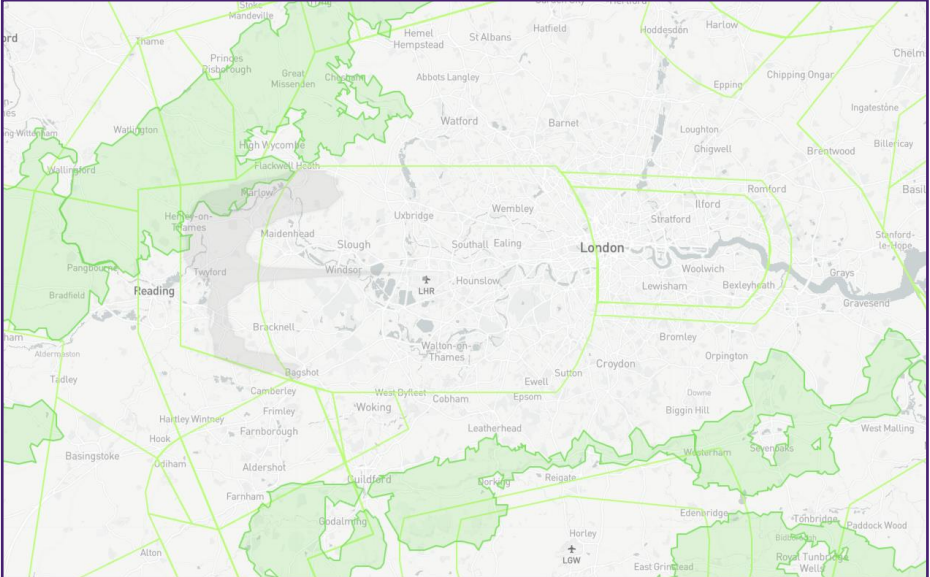


09R = Aircraft approaching the Southern runway from the west

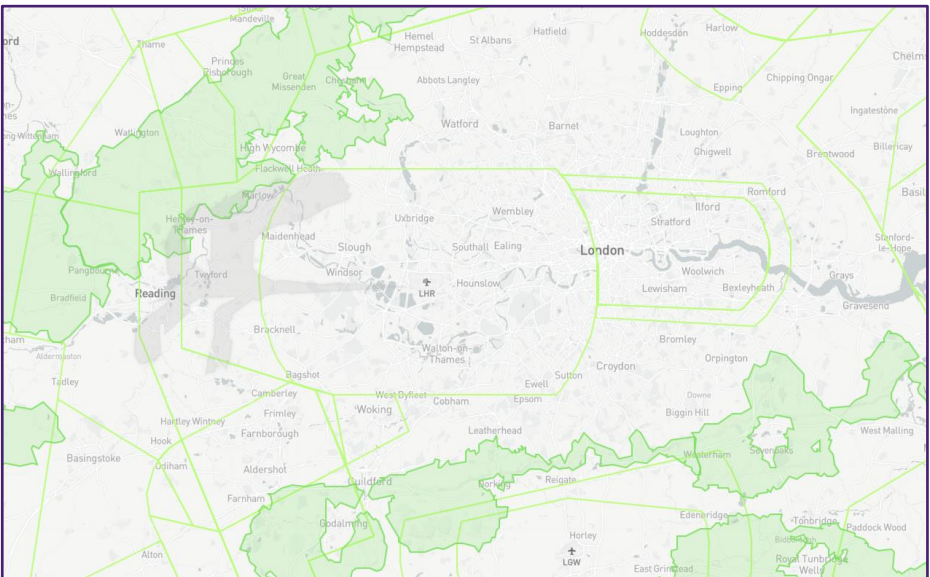


27L = Aircraft approaching the Southern runway from the east

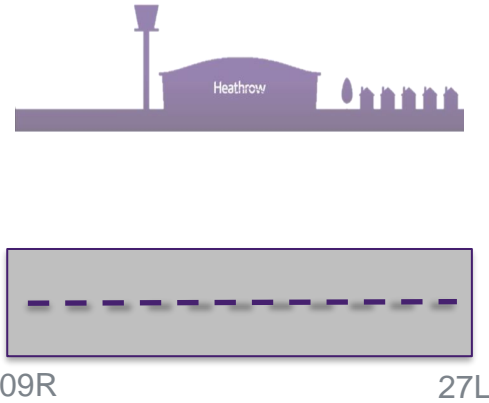
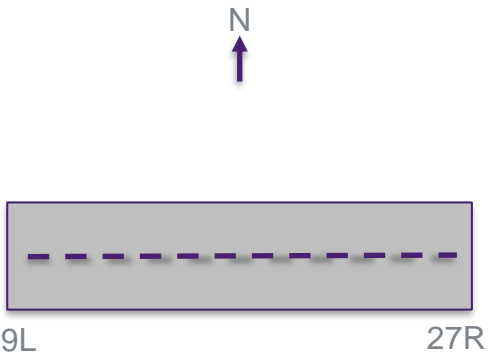
Early Morning Arrivals (0430-0600): 'Do nothing' options



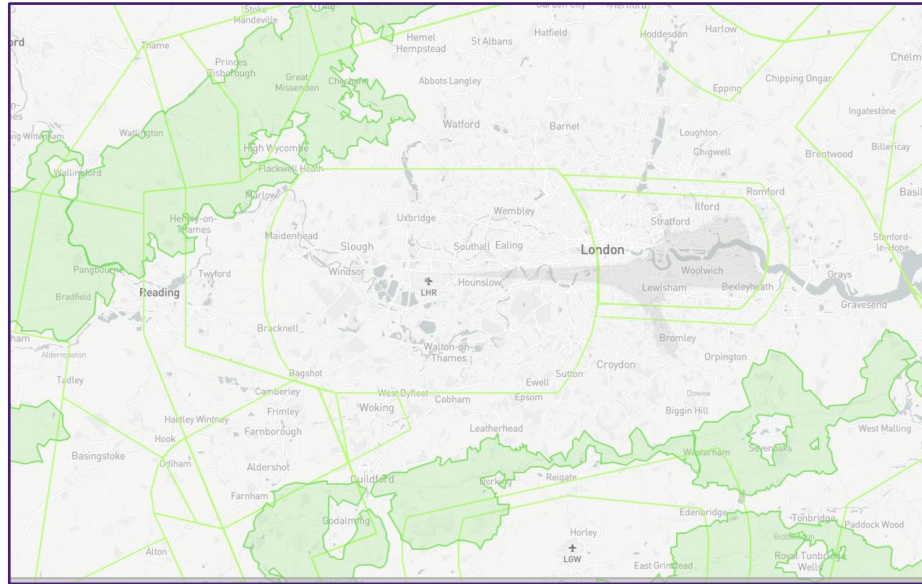
09L Arrivals for "Do-nothing" option



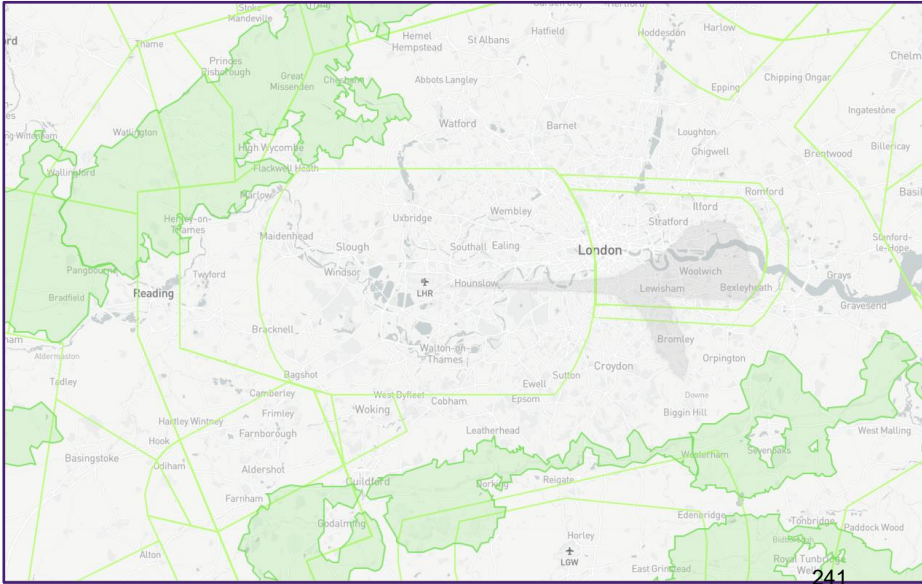
09R Arrivals for "Do-nothing" option



These options reflect the current airspace design and operation. These options do not use PBN.



27R Arrivals for "Do-nothing" option

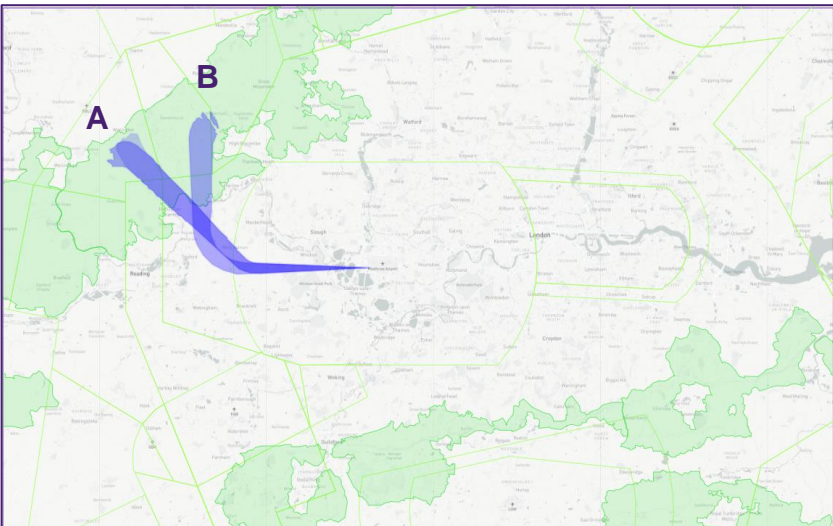


27L Arrivals for "Do-nothing" option

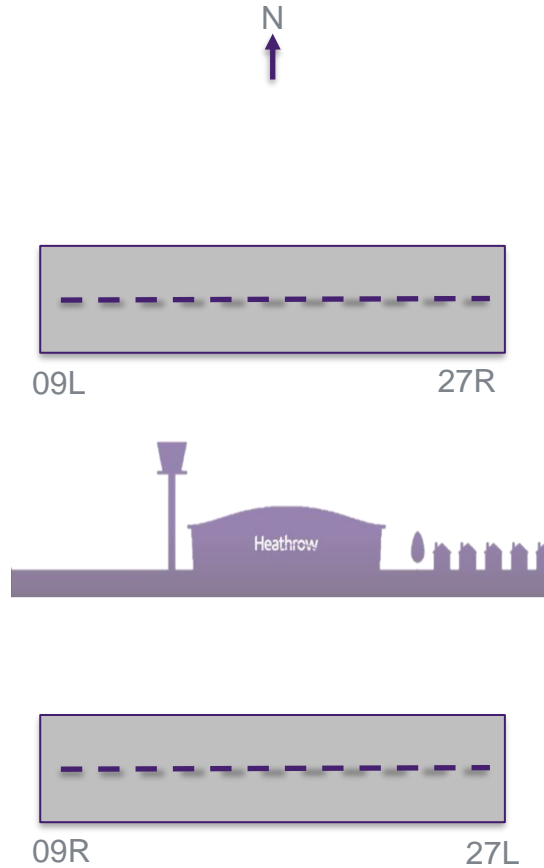
PBN Arrivals Options created for Design Principle 2



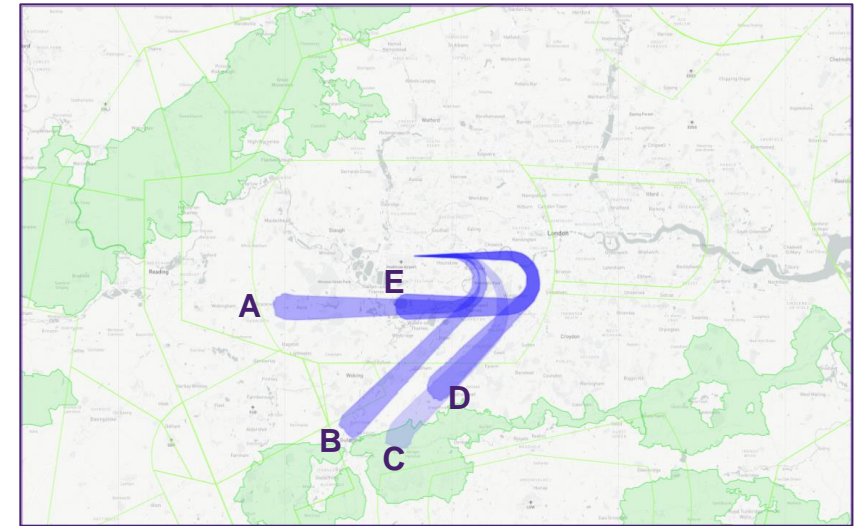
09L Options A, B & C for Design Principle 2



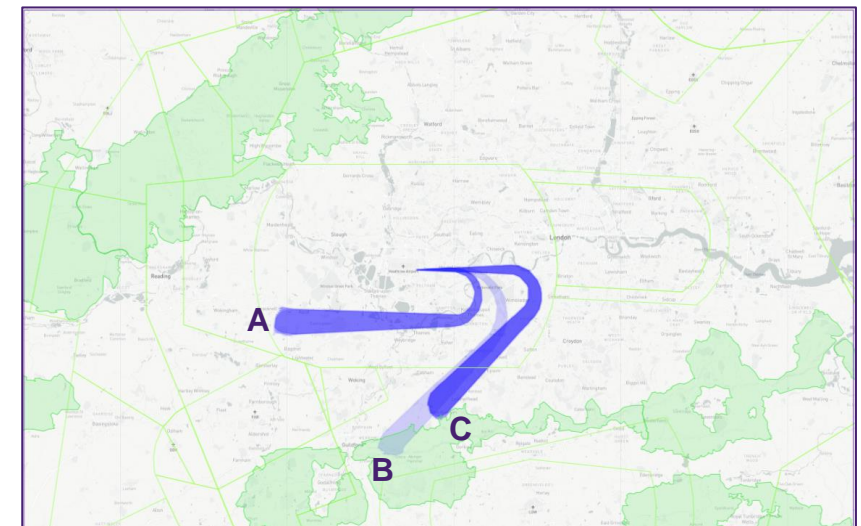
09R Options A & B for Design Principle 2



These options were designed to minimise the number of people exposed to noise up to 7,000ft whilst also considering CO₂ and AONBs

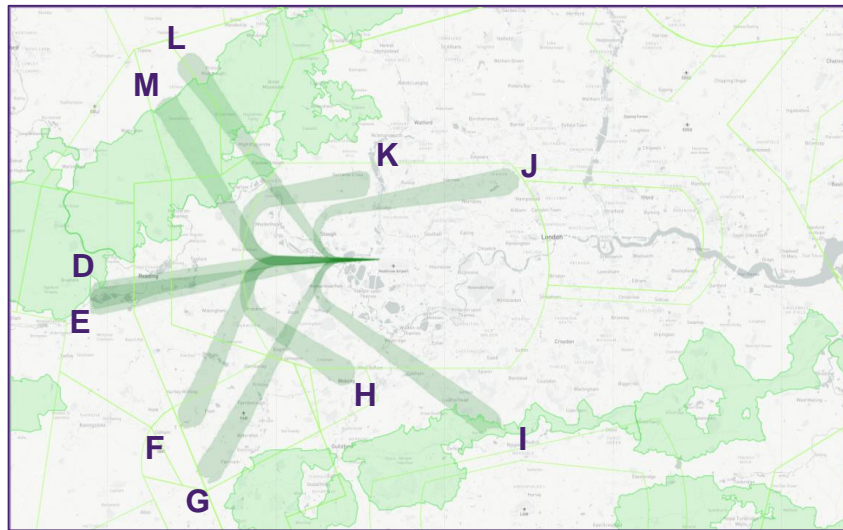


27R Options A, B, C, D & E for Design Principle 2

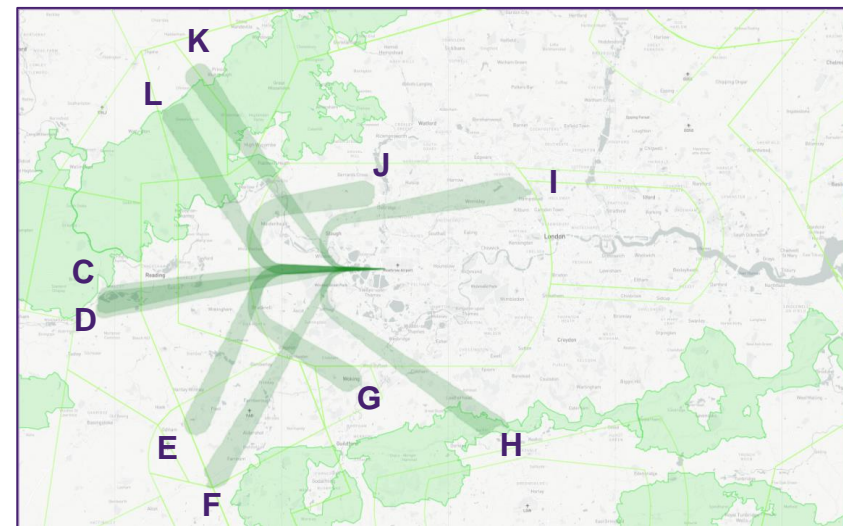


27L Options A, B & C for Design Principle 2

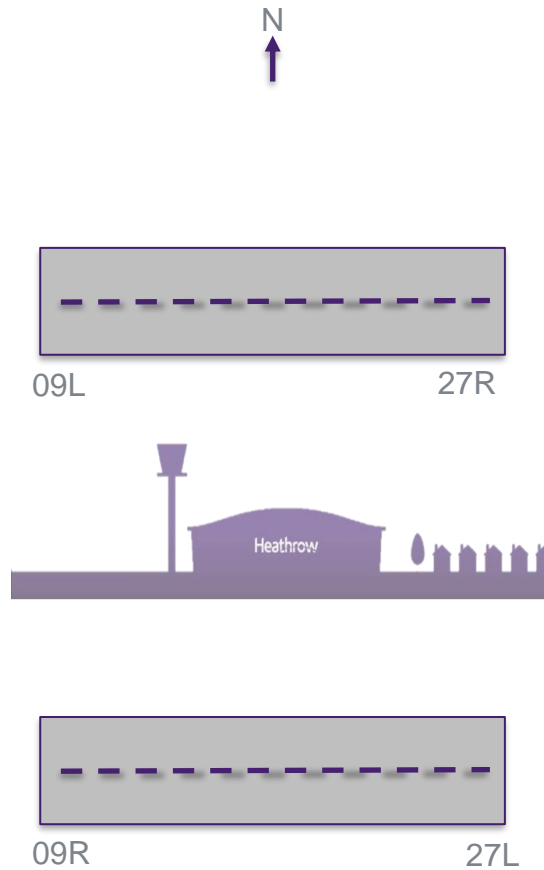
PBN Arrivals Options created for Design Principle 4



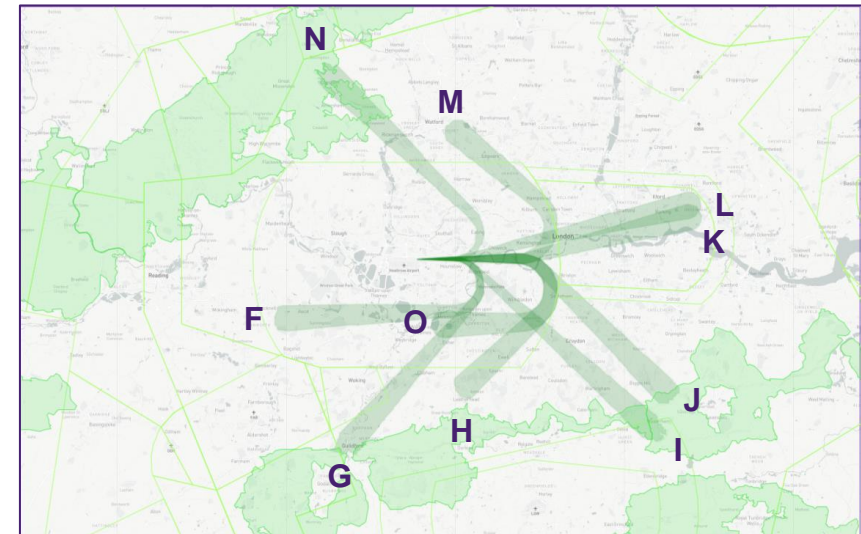
09L Options D - M for Design Principle 4



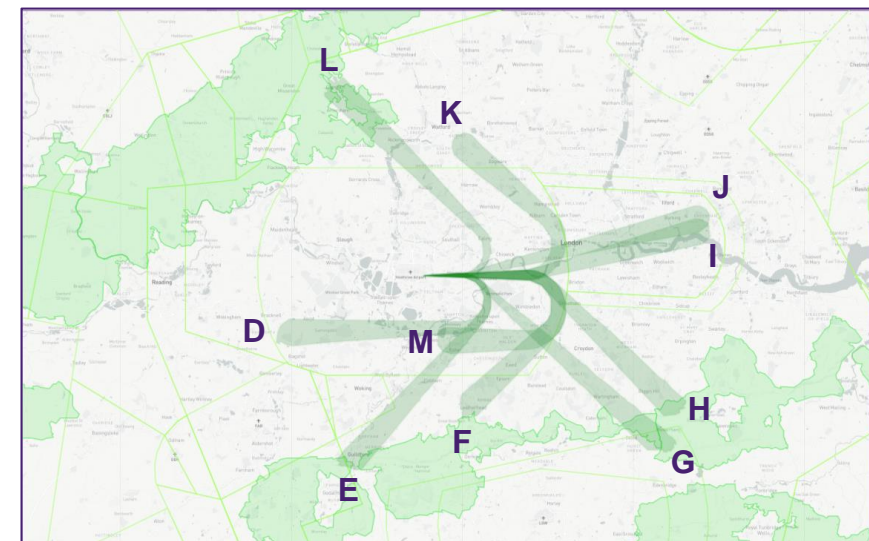
09R Options C - L for Design Principle 4



These options were designed to minimise the number of track miles flown

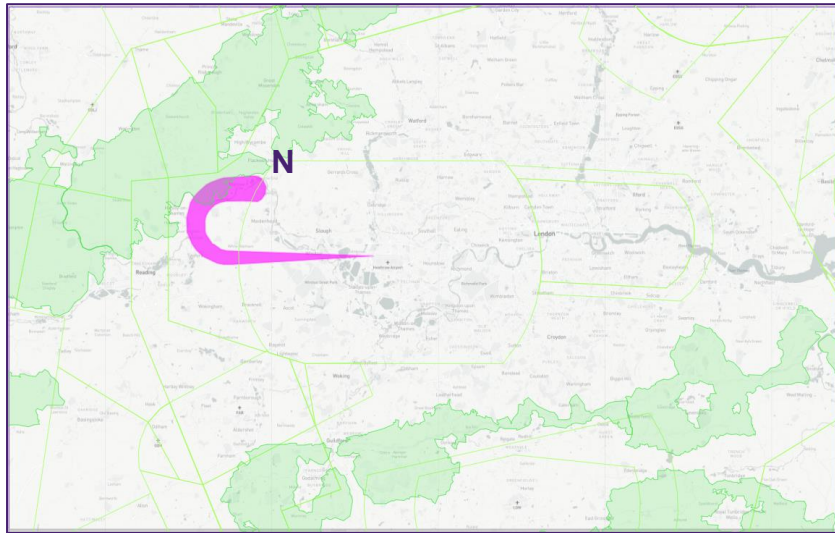


27R Options F - O for Design Principle 4

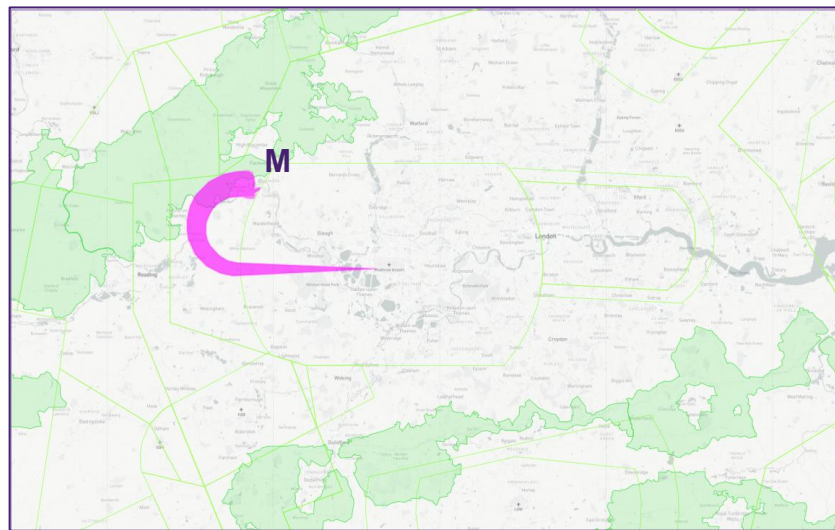


27L Options D - M for Design Principle 4

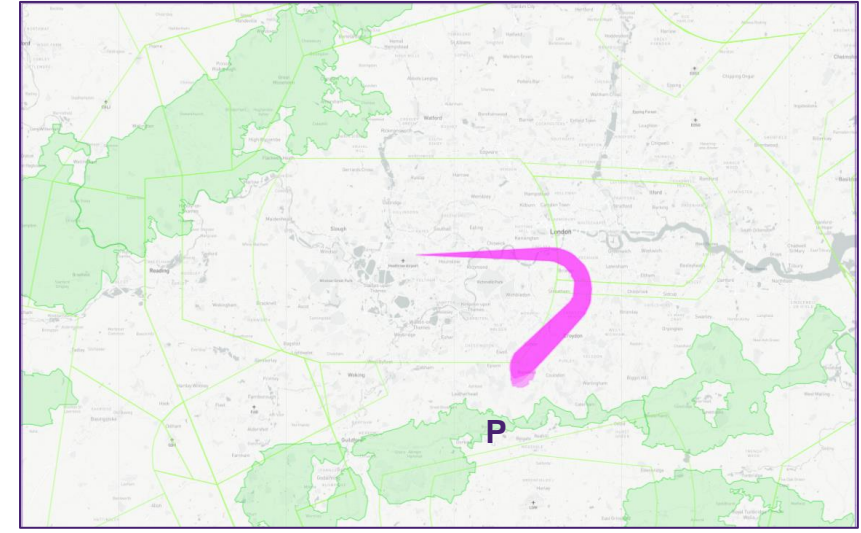
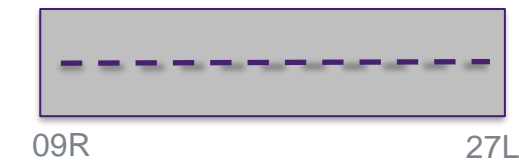
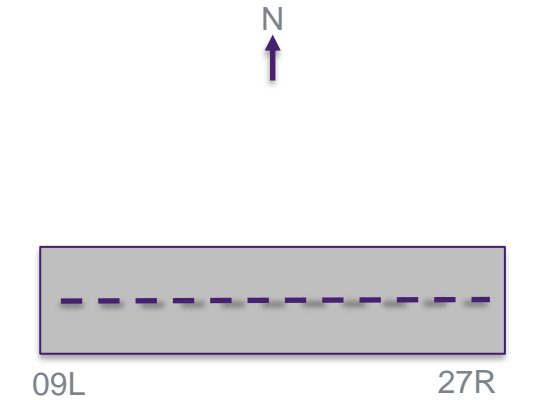
PBN Arrivals Options created for Design Principle 9



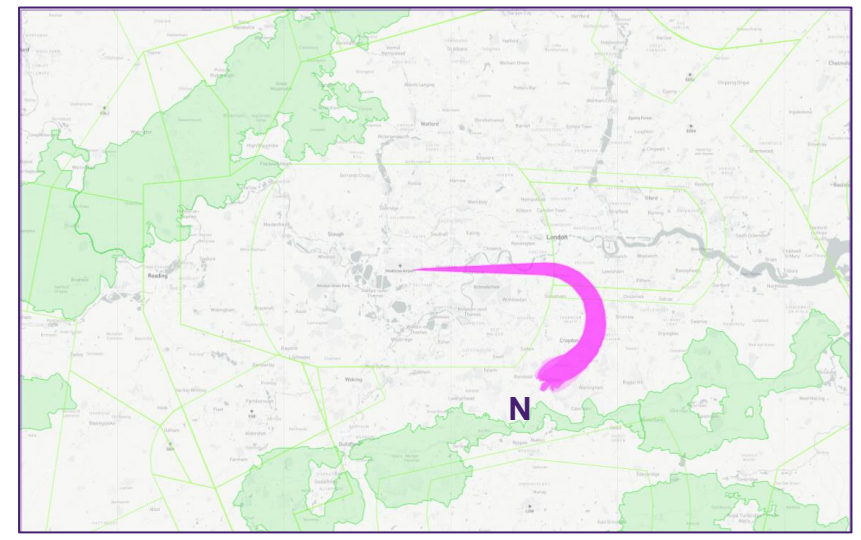
09L Option N for Design Principle 9



09R Option M for Design Principle 9



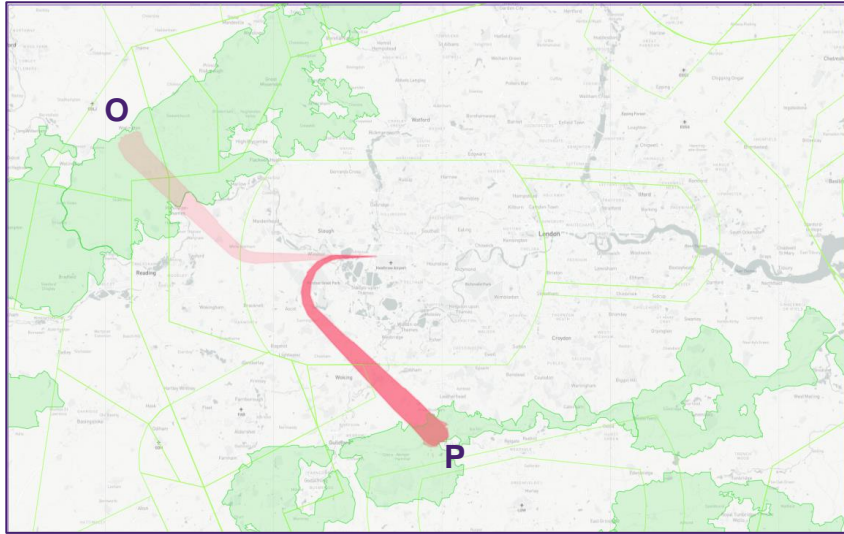
27R Option P for Design Principle 9



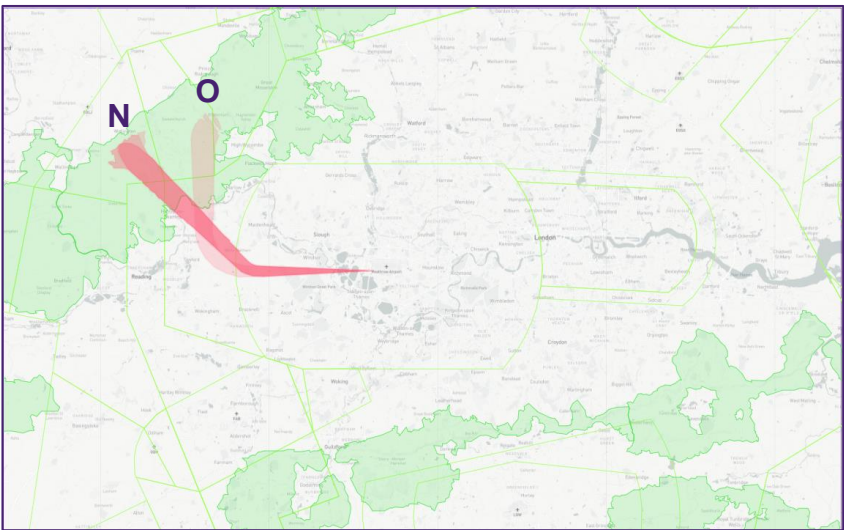
27L Option N for Design Principle 9 244

These options were designed to minimise the number of people who experience an increase in noise

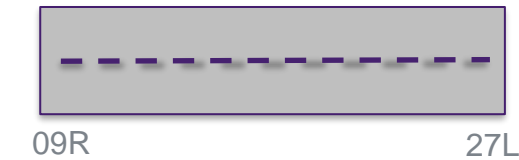
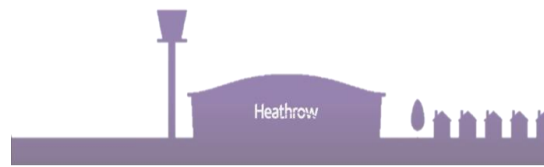
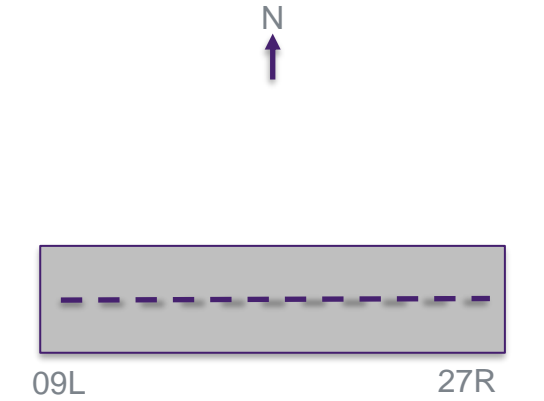
PBN Arrivals Options created for Design Principle 10



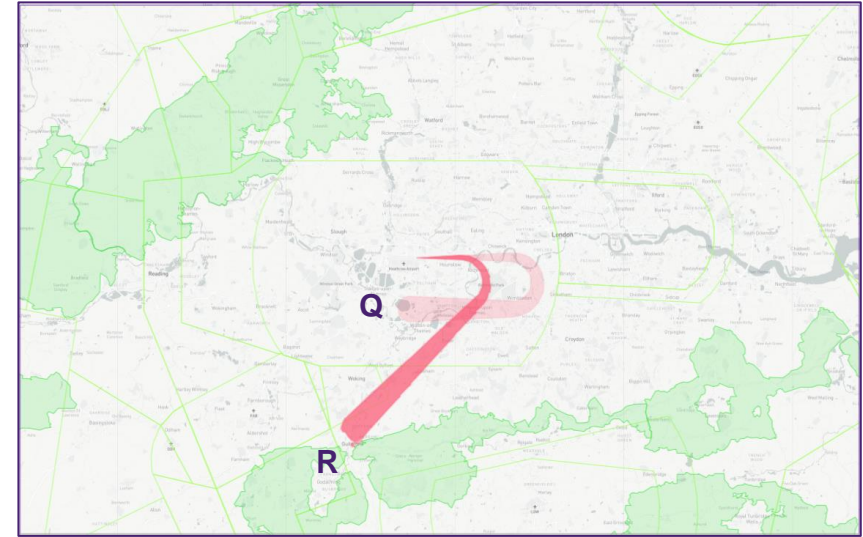
09L Options O & P for Design Principle 10



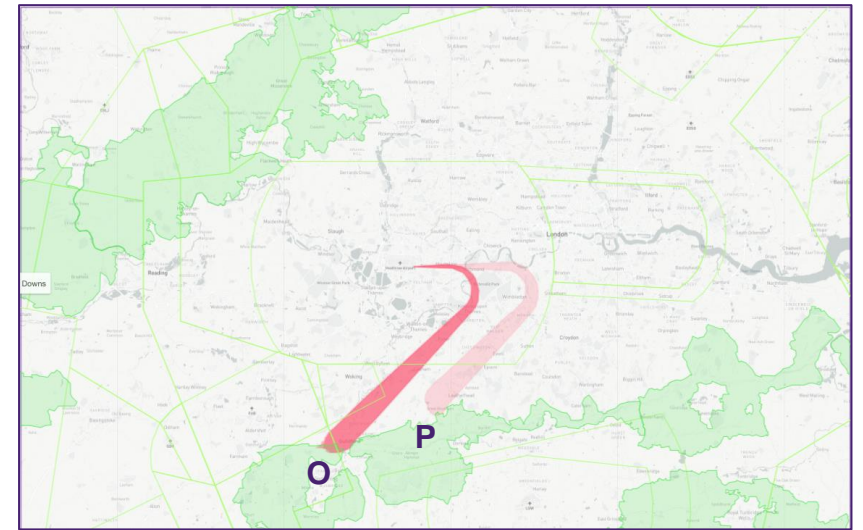
09R Options N & O for Design Principle 10



These options were designed to minimise the number of people exposed to noise up to 7,000ft.

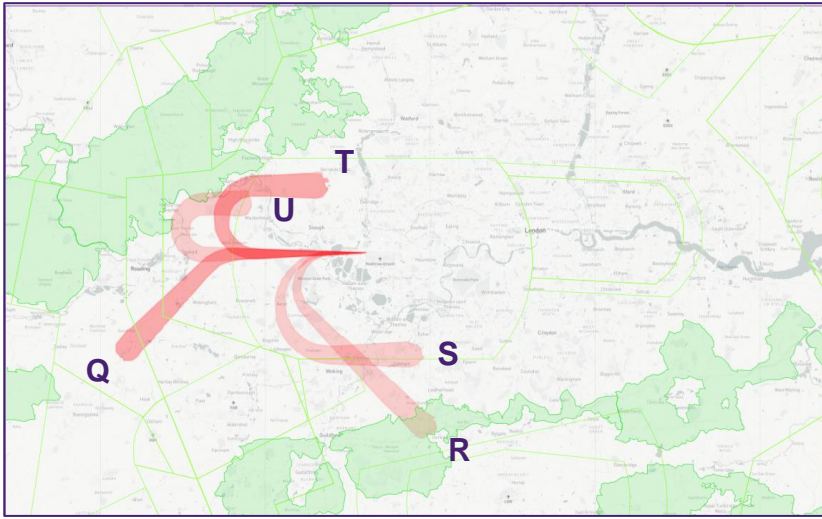


27R Options Q & R for Design Principle 10

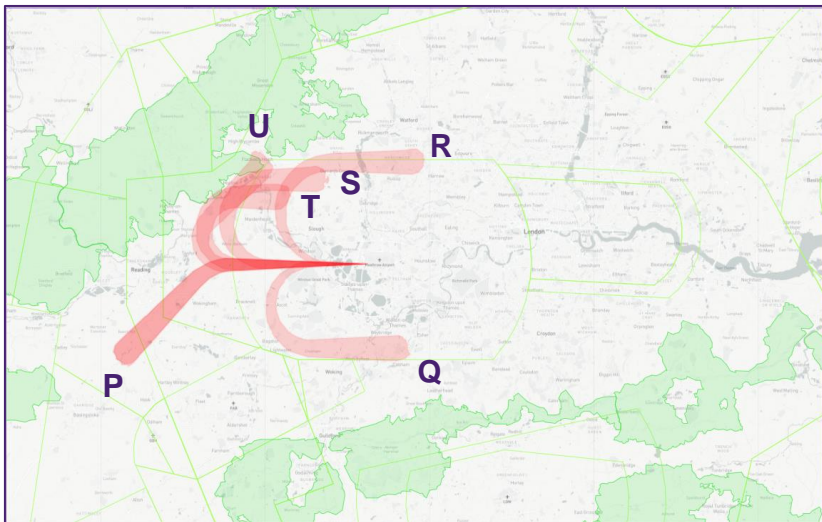


27L Options O & P for Design Principle 10

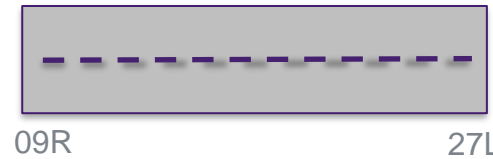
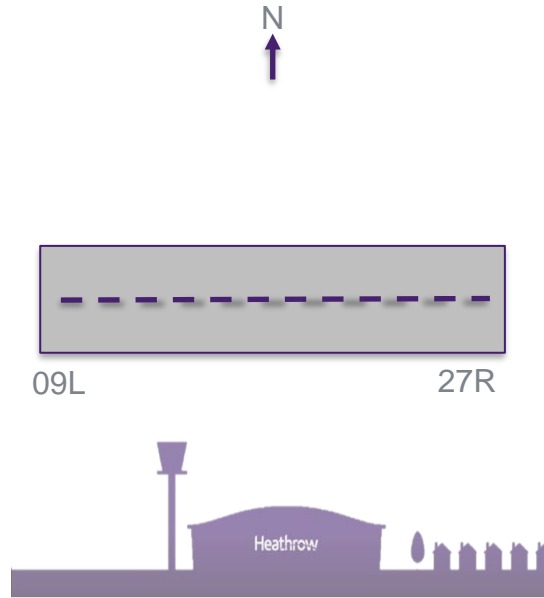
PBN Arrivals Options created for blend of Design Principles 2, 4, 9 and 10



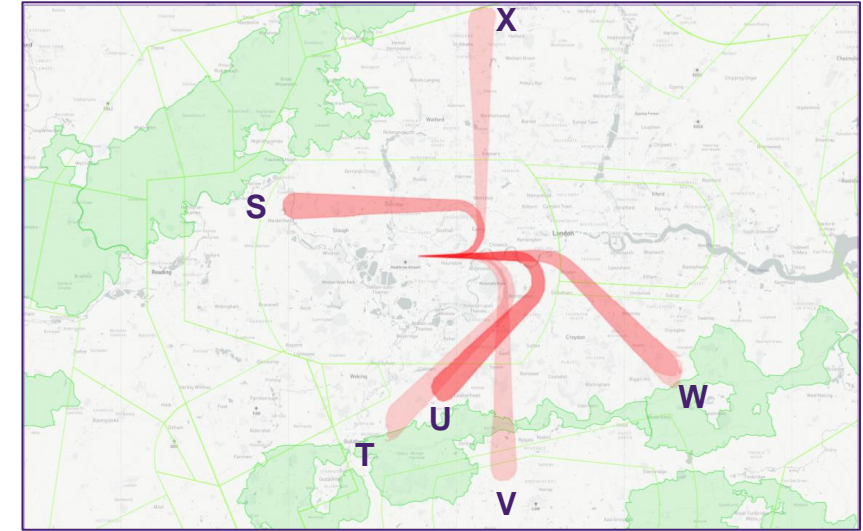
09L Options Q - U for blend of Design Principles 2, 4, 9 & 10



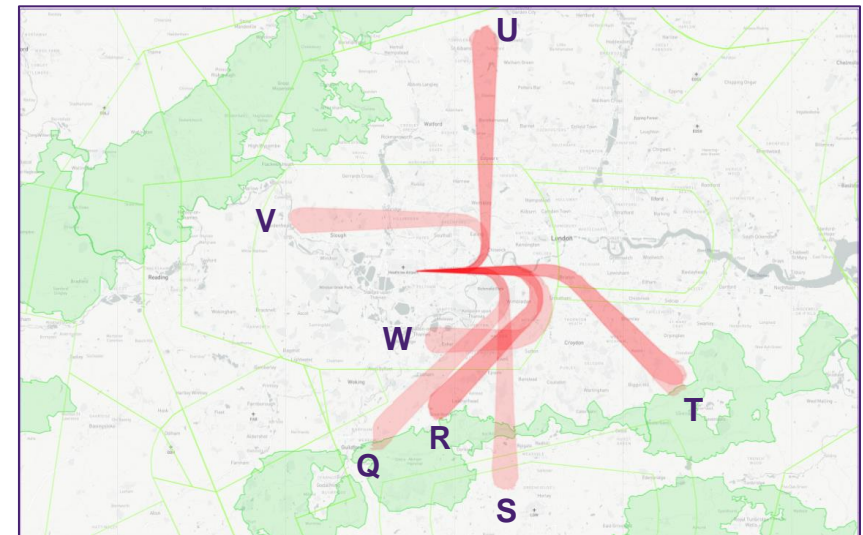
09R Options P – U for blend of Design Principles 2, 4, 9 & 10



These options were designed to balance population numbers, newly overflown, CO₂ and AONBs

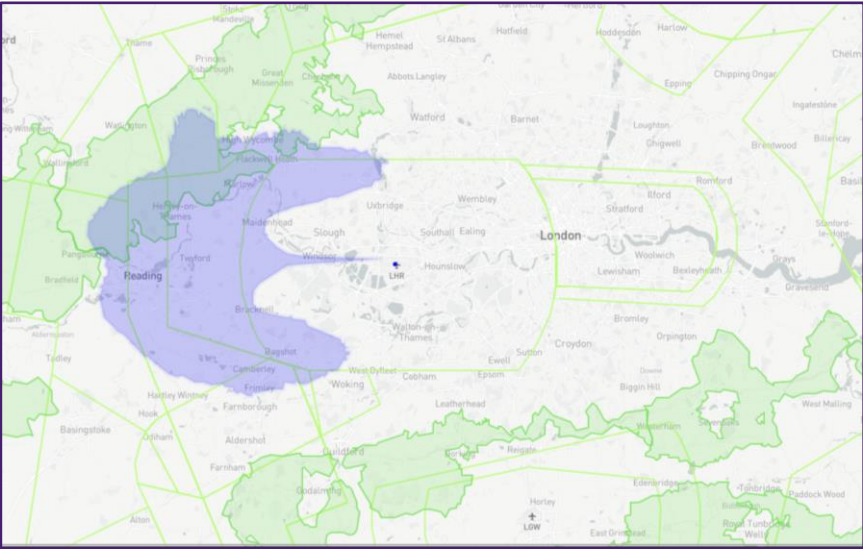


27R Options S – X for blend of Design Principles 2, 4, 9 & 10

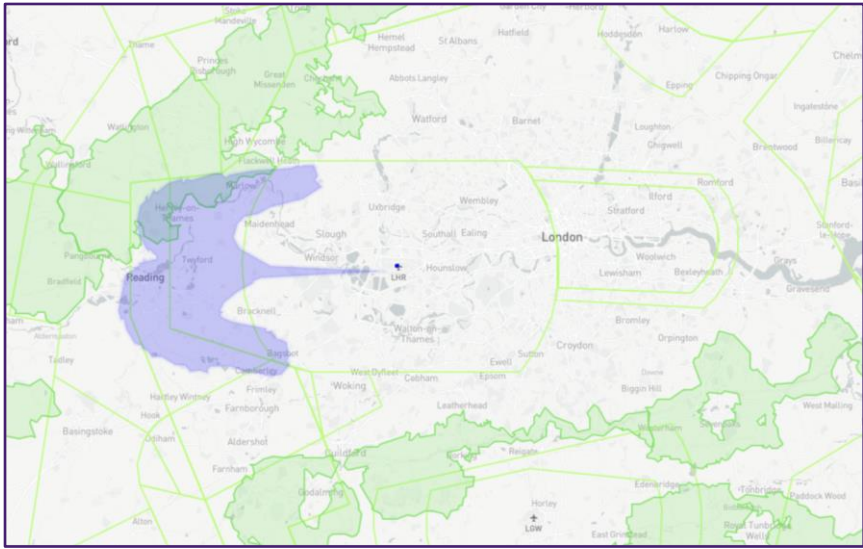


27L Options Q - W for blend of Design Principles 2, 4, 9 & 10

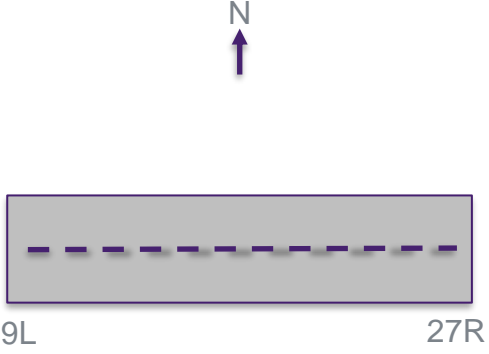
Vectored Arrivals: 'Do nothing' options



09L Vectored Arrivals for "Do-nothing" option

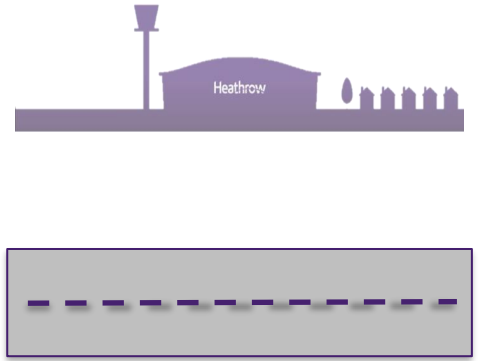


09R Vectored Arrivals for "Do-nothing" option



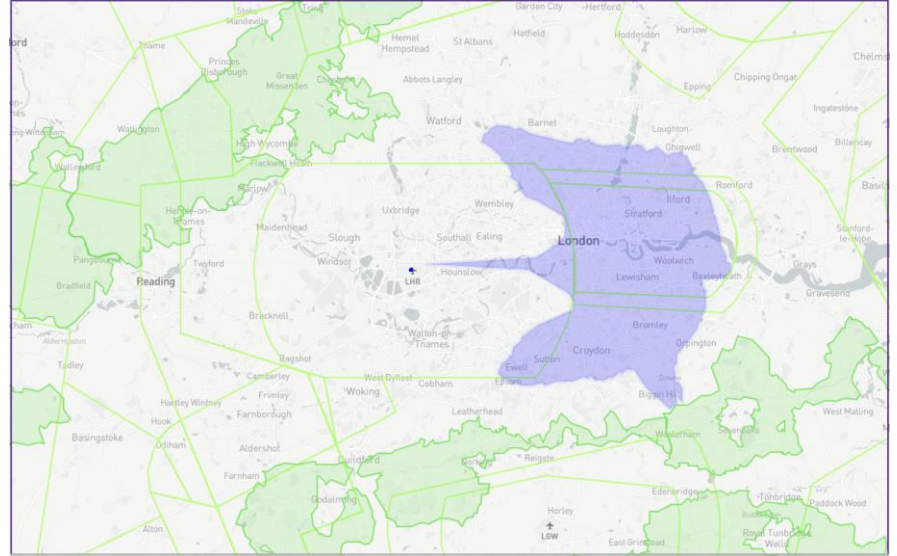
09L

27R

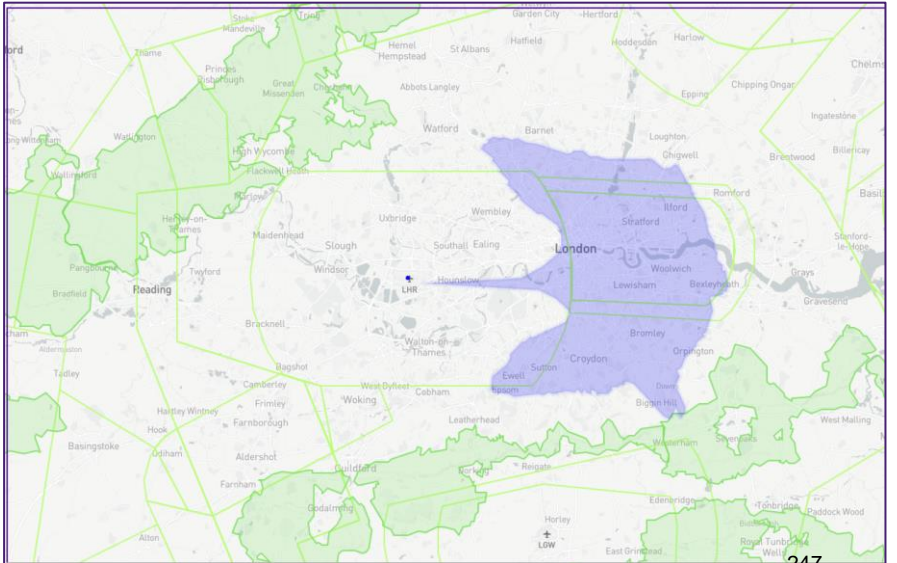


09R

27L

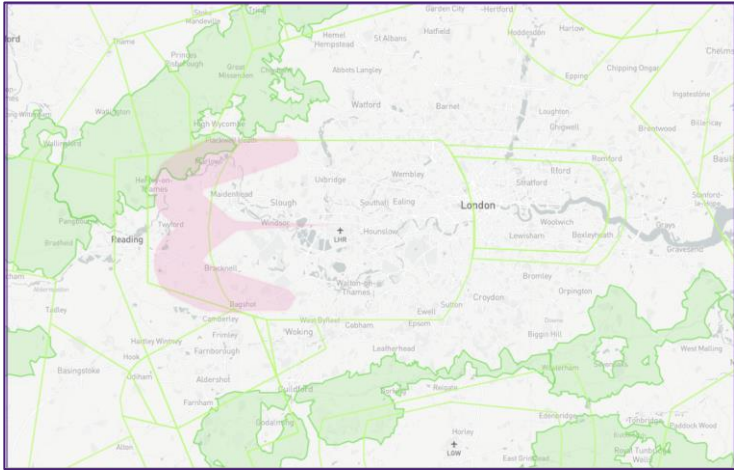


27R Vectored Arrivals for "Do-nothing" option

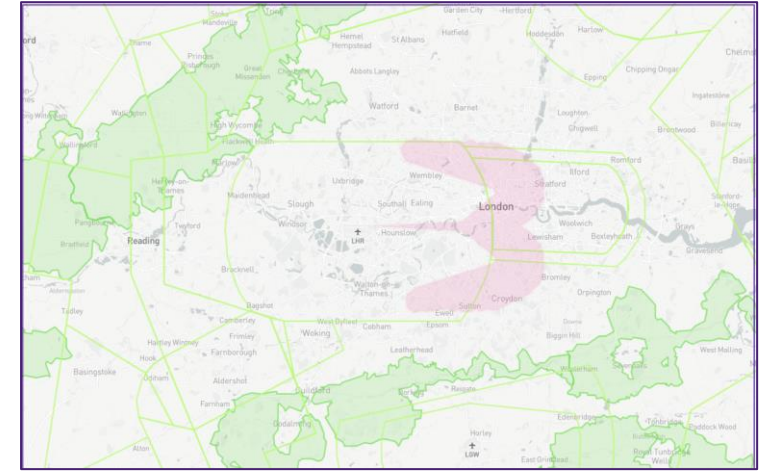
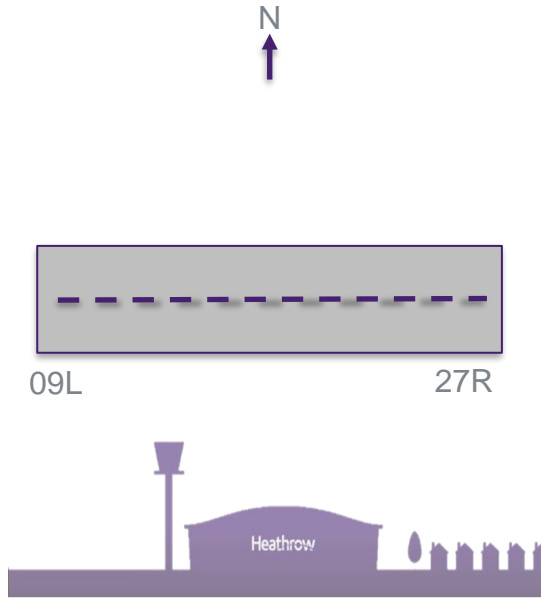


27L Vectored Arrivals for "Do-nothing" option

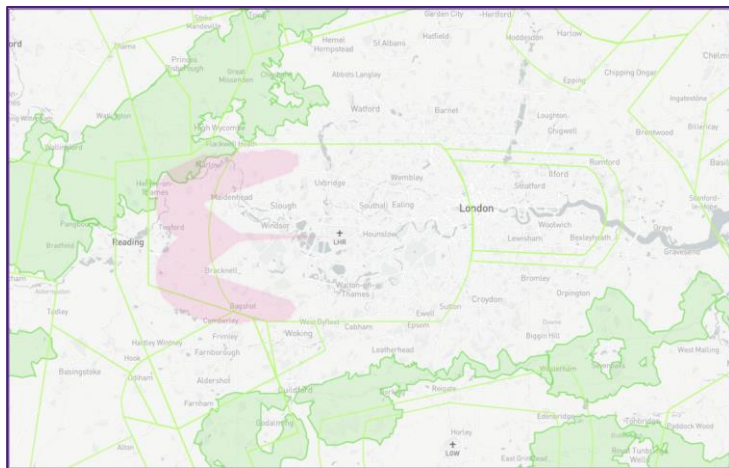
Vectored Arrivals Option A: 8-12nm from the runway end



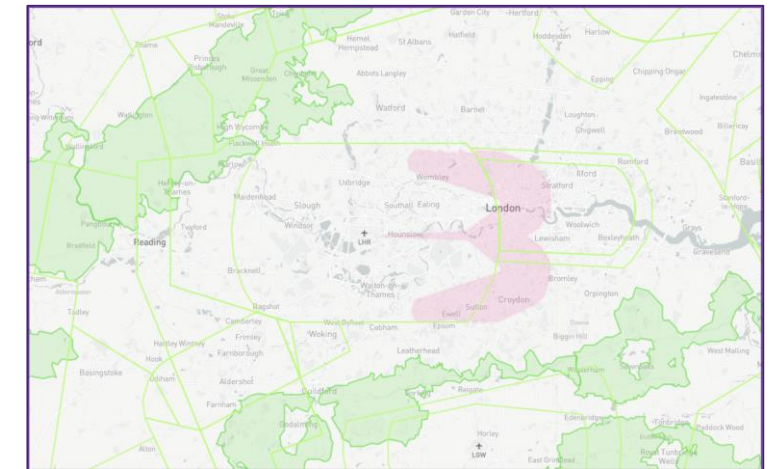
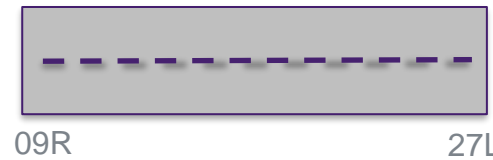
09L Option A



27R Option A



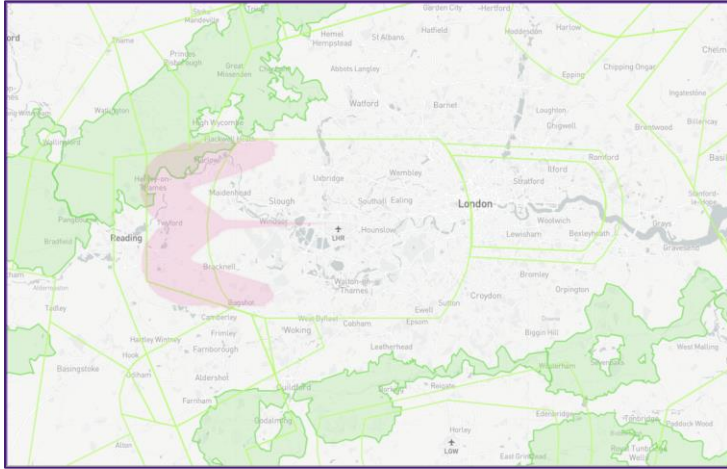
09R Option A



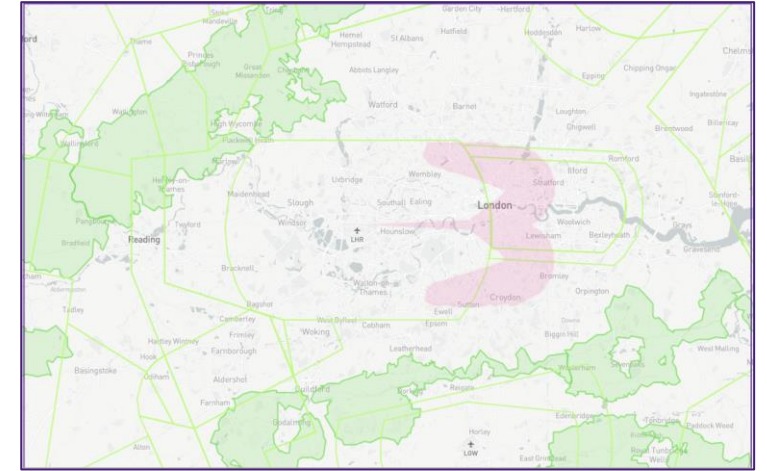
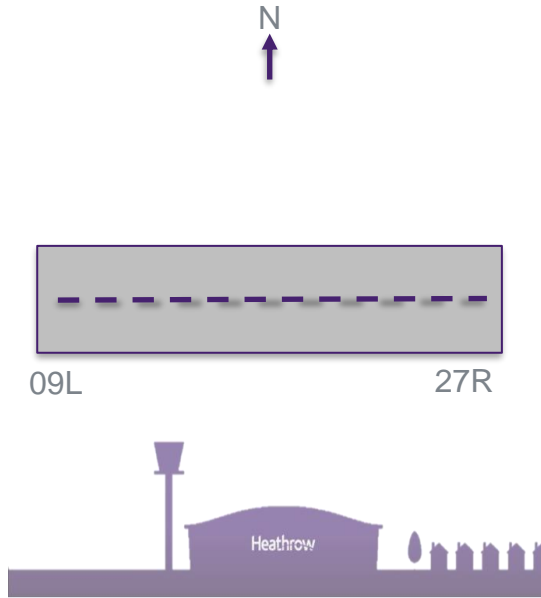
27L Option A

These options have aircraft joining the final approach between 8 and 12 nautical miles.

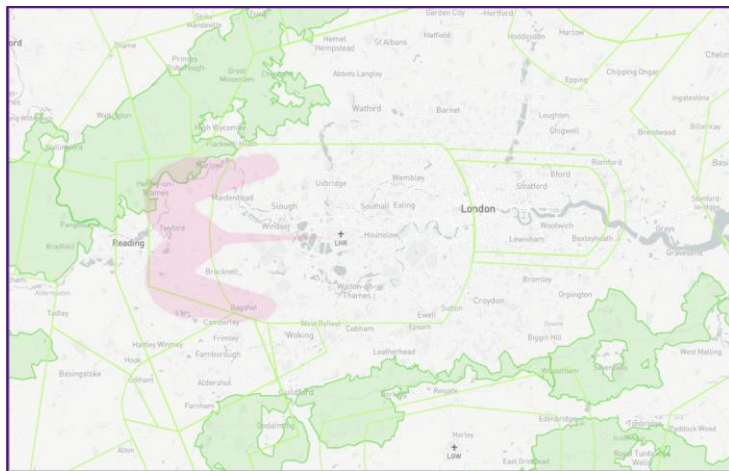
Vectored Arrivals Option B: 9-13nm from the runway end



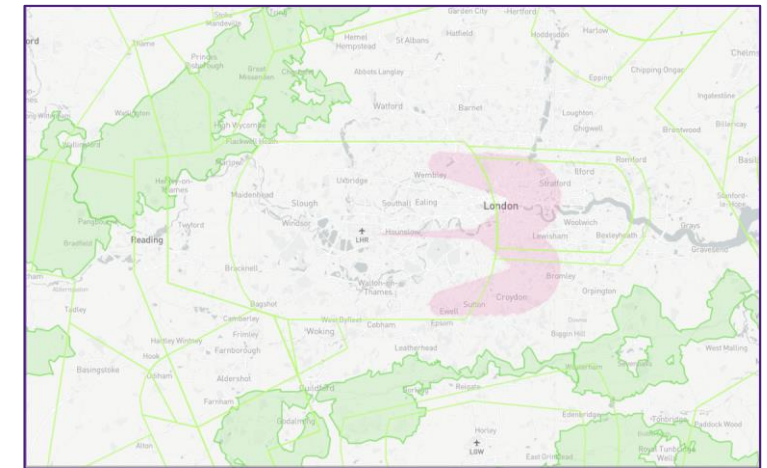
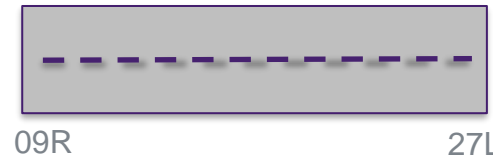
09L Option B



27R Option B



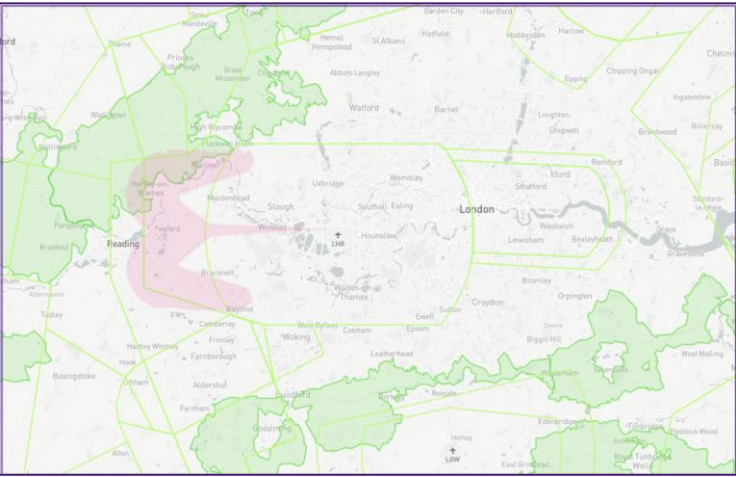
09R Option B



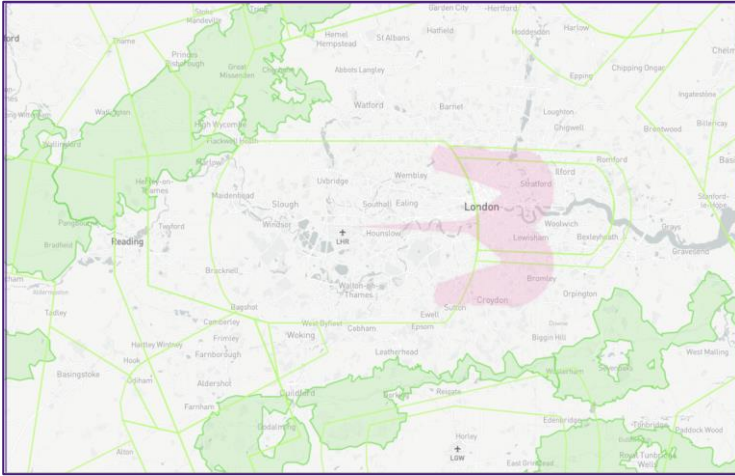
27L Option B

These options have aircraft joining the final approach between 9 and 13 nautical miles.

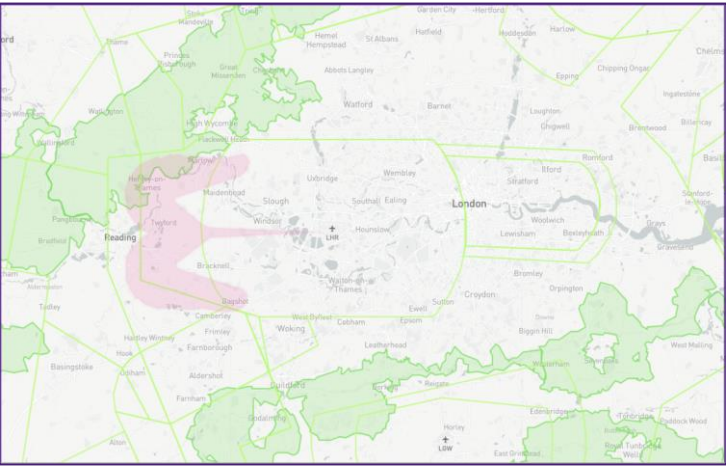
Vectored Arrivals Option C: 10-14nm from the runway end



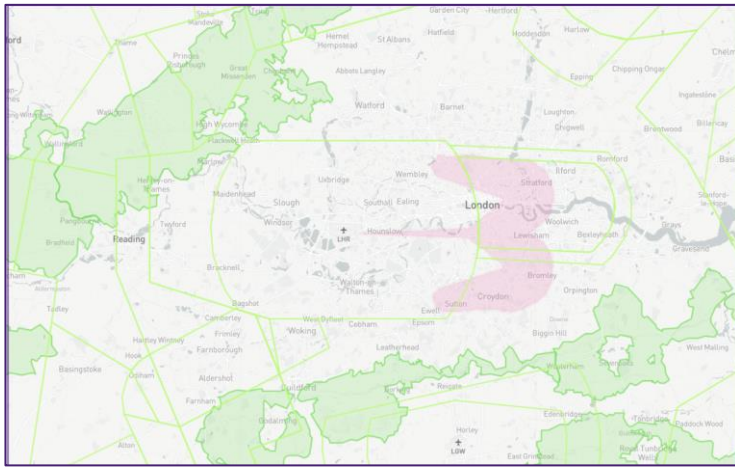
09L Option C



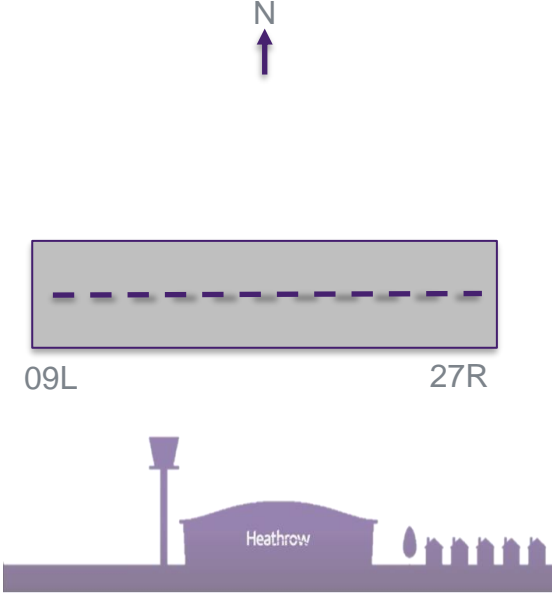
27R Option C



09R Option C



27L Option C



09L

27R

N



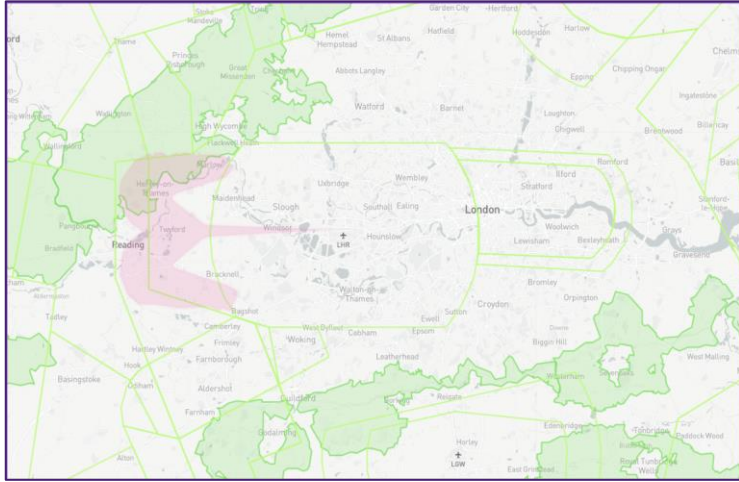
Heathrow

09R

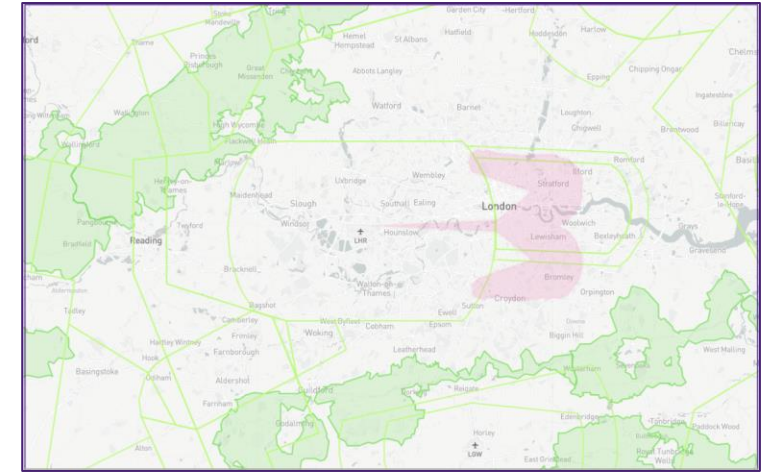
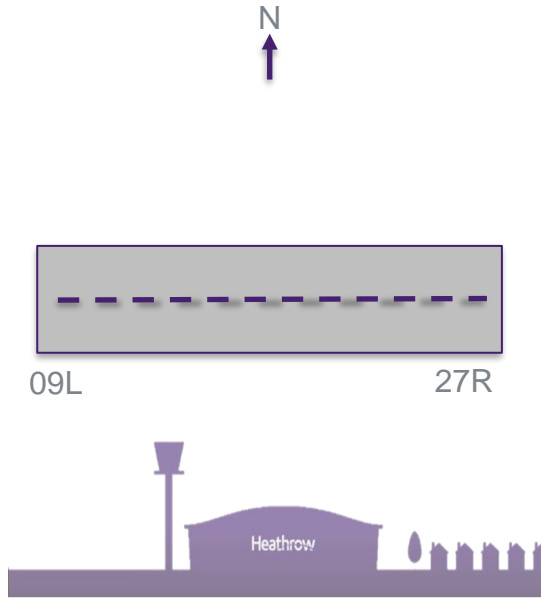
27L

These options have aircraft joining the final approach between 10 and 14 nautical miles.

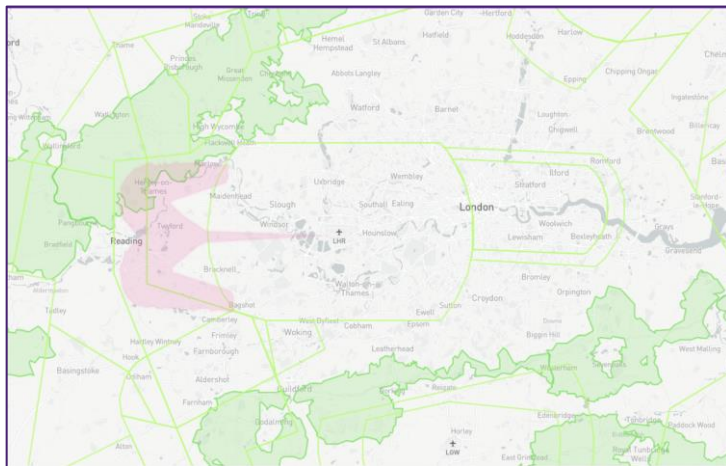
Vectored Arrivals Option D: 11-15nm from the runway end



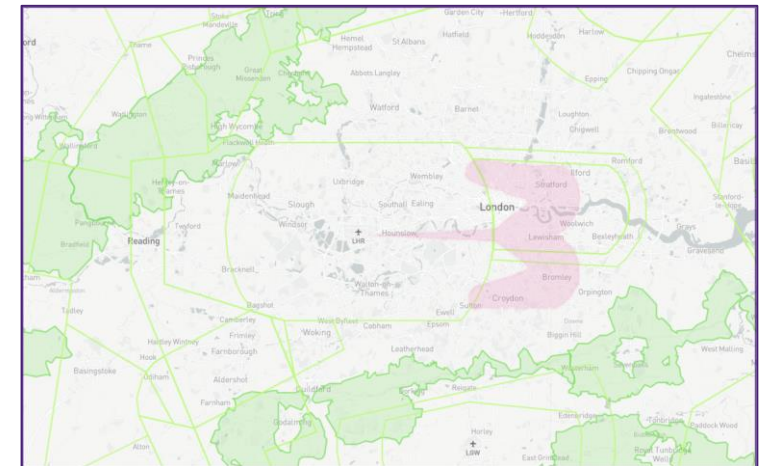
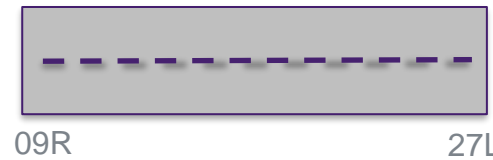
09L Option D



27R Option D



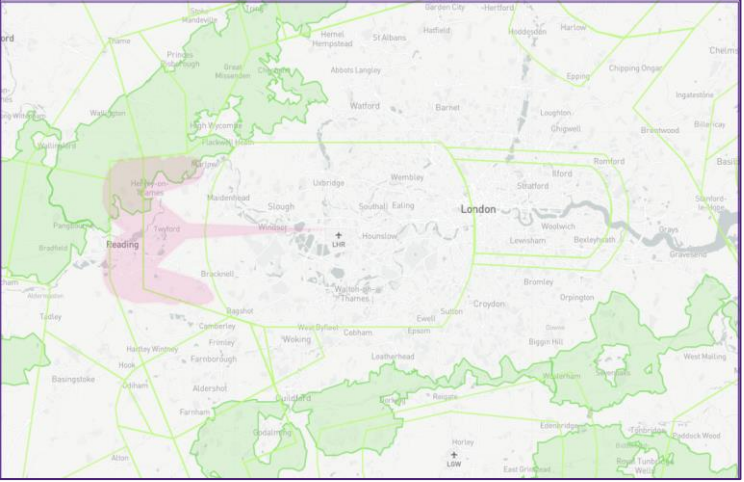
09R Option D



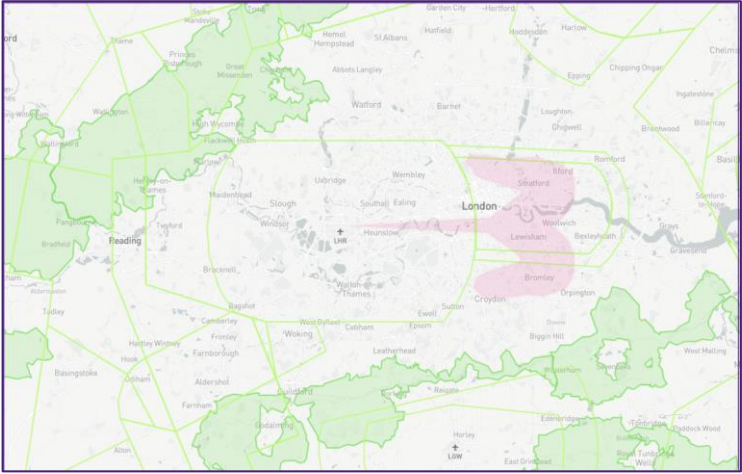
27L Option D

These options have aircraft joining the final approach between 11 and 15 nautical miles.

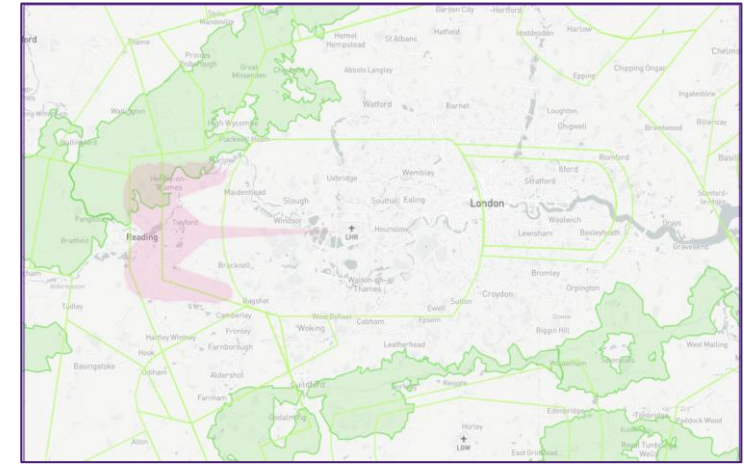
Vectored Arrivals Option E: 12-16nm from the runway end



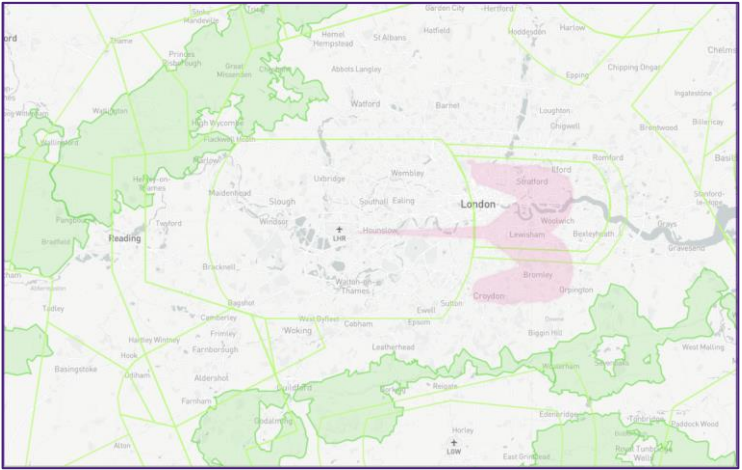
09L Option E



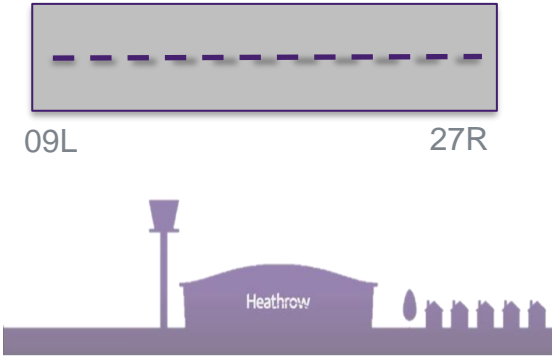
27R Option E



09R Option E

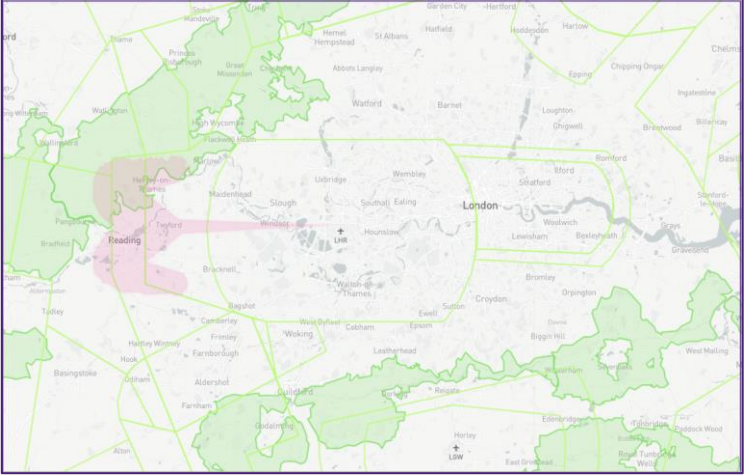


27L Option E



These options have aircraft joining the final approach between 12 and 16 nautical miles.

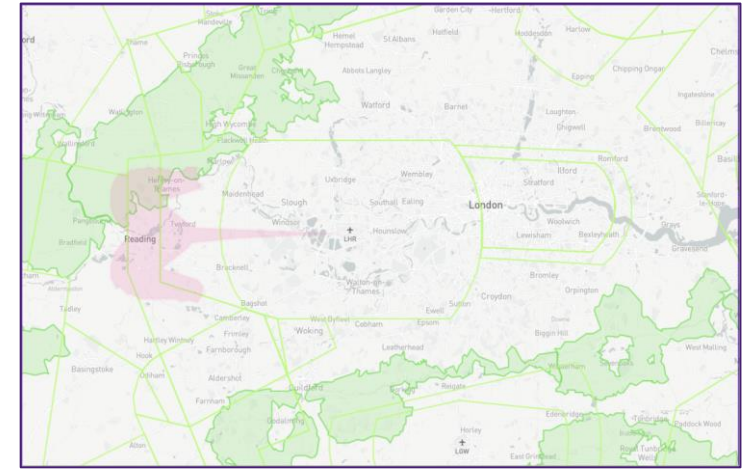
Vectored Arrivals Option F: 13-17nm from the runway end



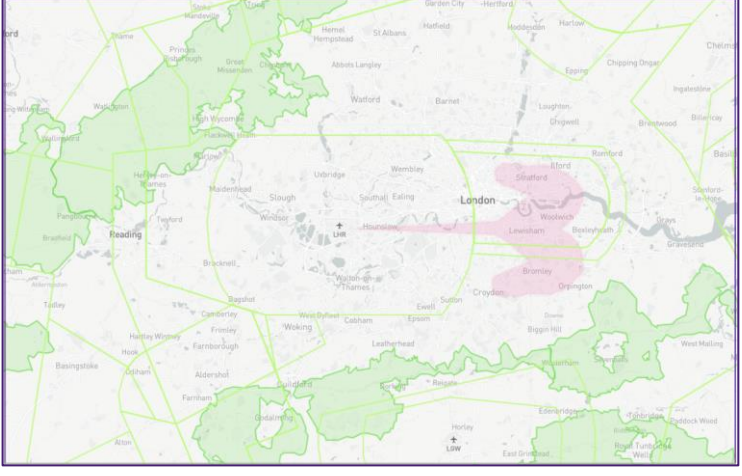
09L Option F



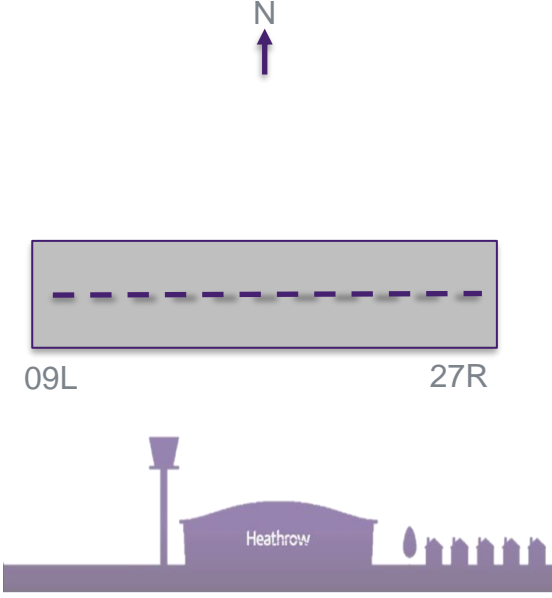
27R Option F



09R Option F



27L Option F



09L

27R

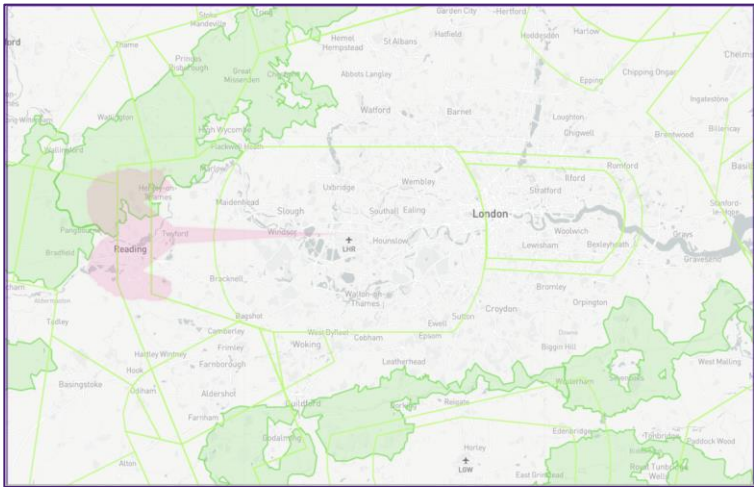


09R

27L

These options have aircraft joining the final approach between 13 and 17 nautical miles.

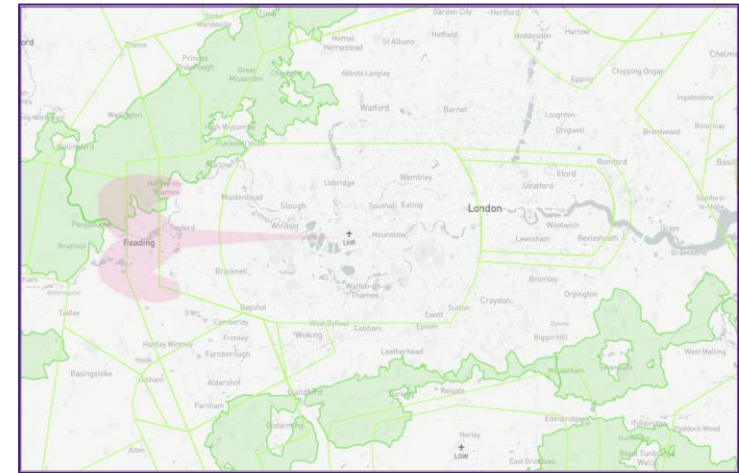
Vectored Arrivals Option G: 14-18nm from the runway end



09L Option G



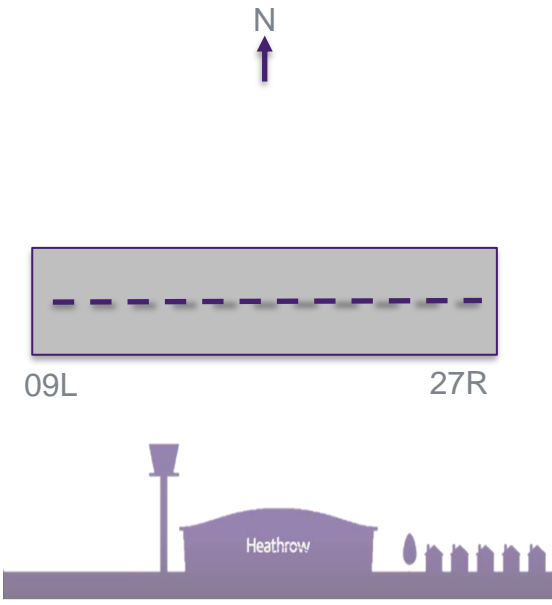
27R Option G



09R Option G



27L Option G



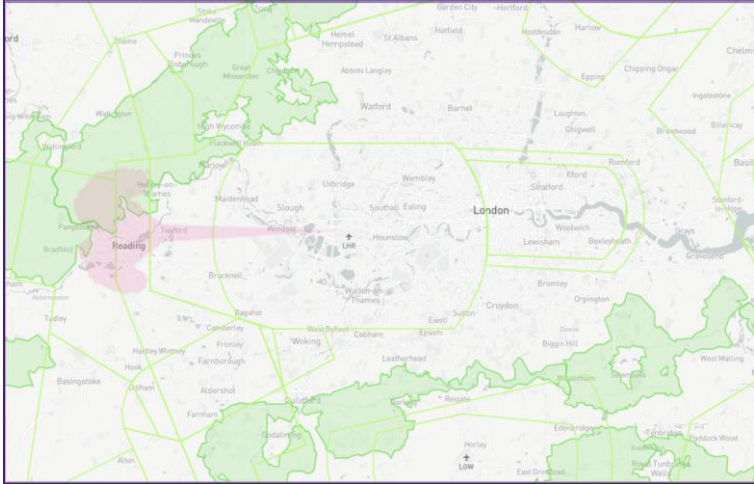
09L 27R



09R 27L

These options have aircraft joining the final approach between 14 and 18 nautical miles.

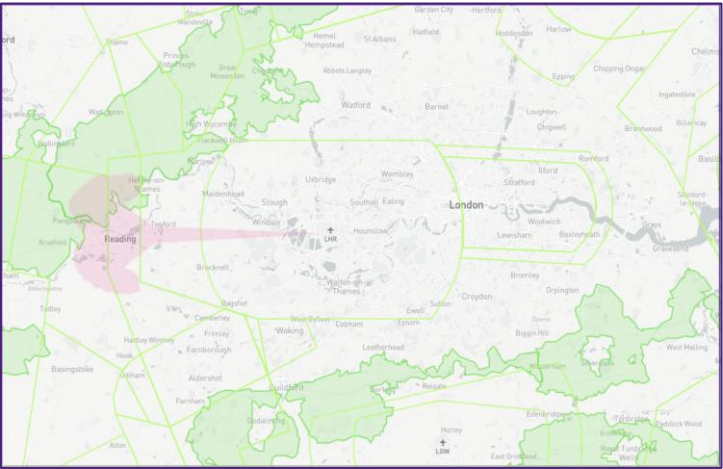
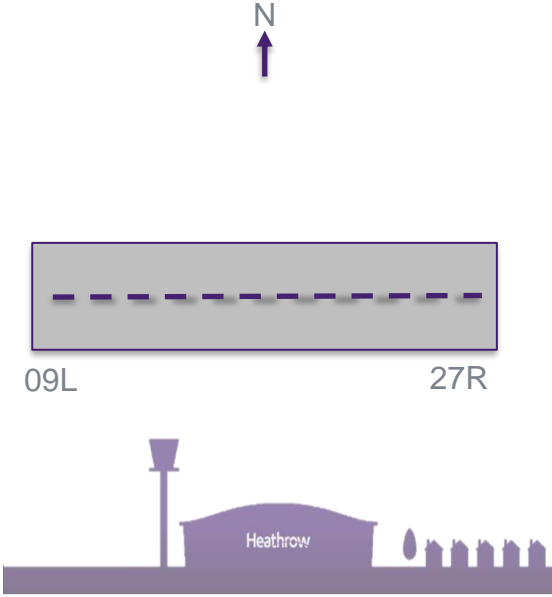
Vectored Arrivals Option H: 15-19nm from the runway end



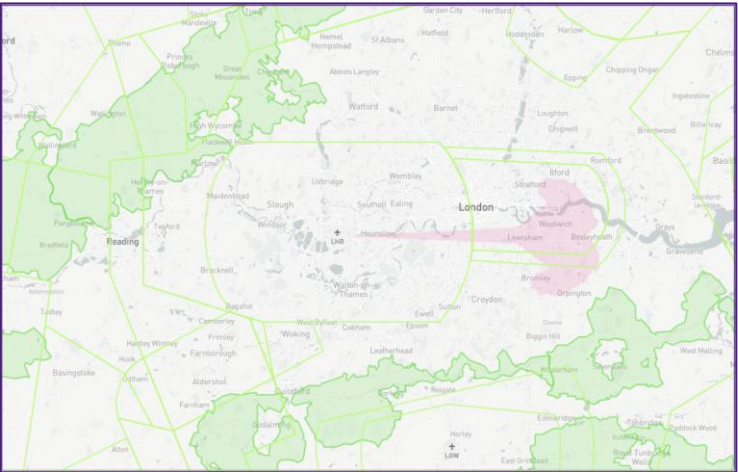
09L Option H



27R Option H



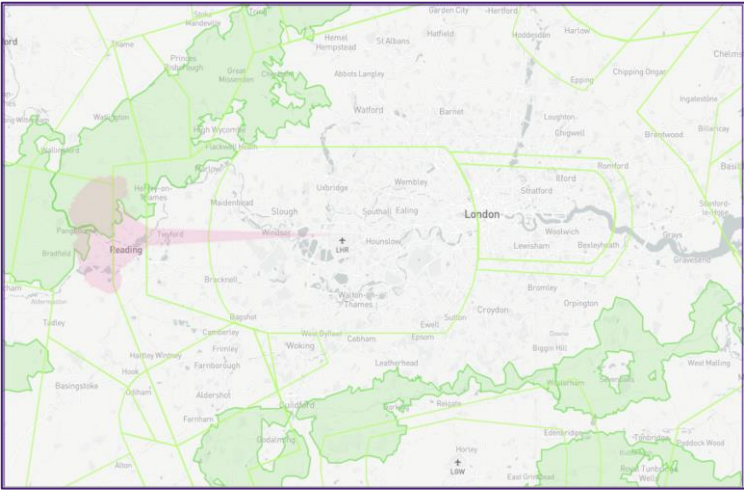
09R Option H



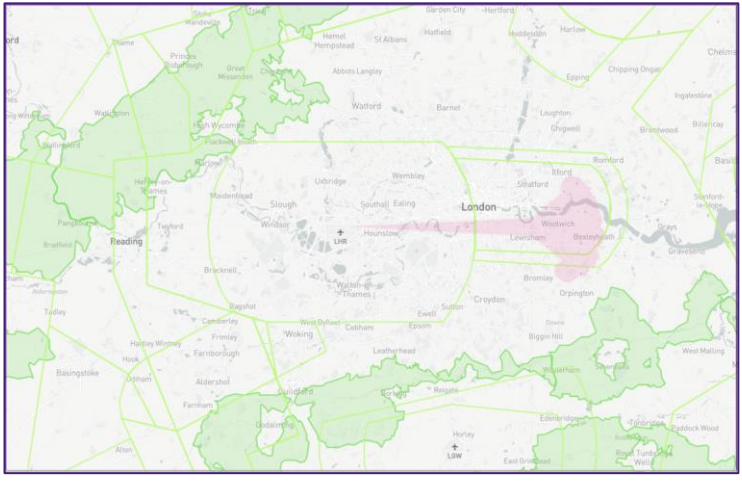
27L Option H

These options have aircraft joining the final approach between 15 and 19 nautical miles.

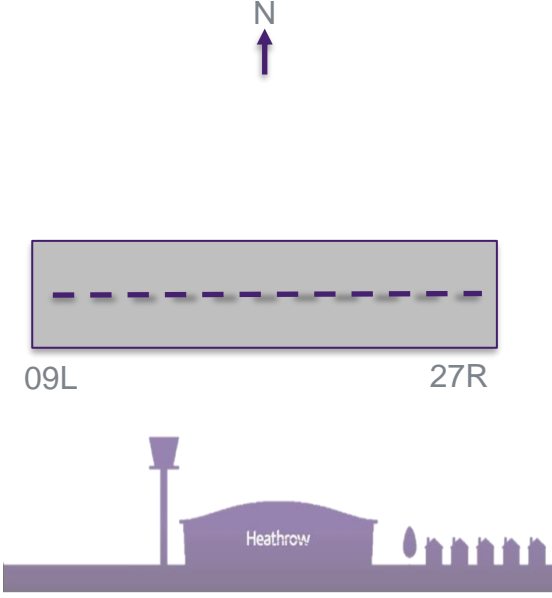
Vectored Arrivals Option I: 16-20nm from the runway end



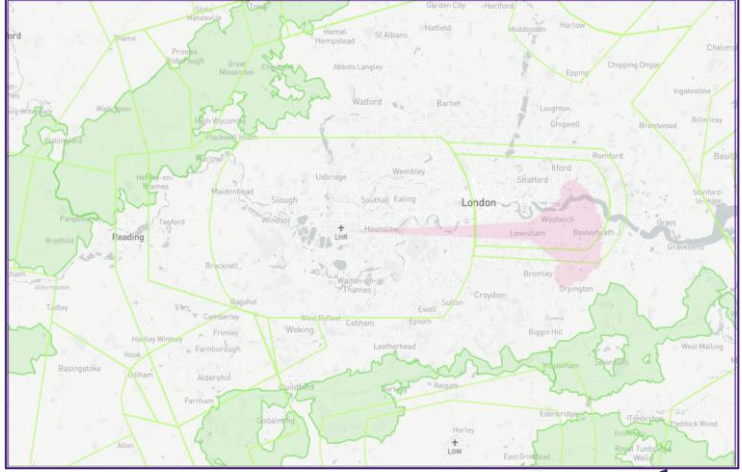
09L Option I



27R Option I



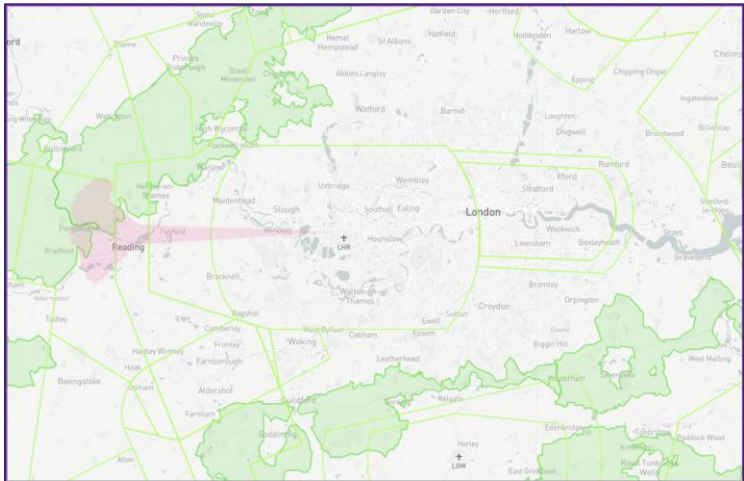
09R Option I



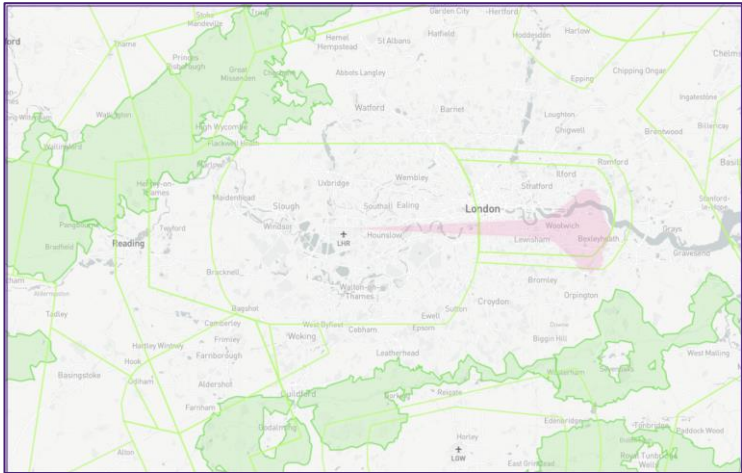
27L Option I

These options have aircraft joining the final approach between 16 and 20 nautical miles.

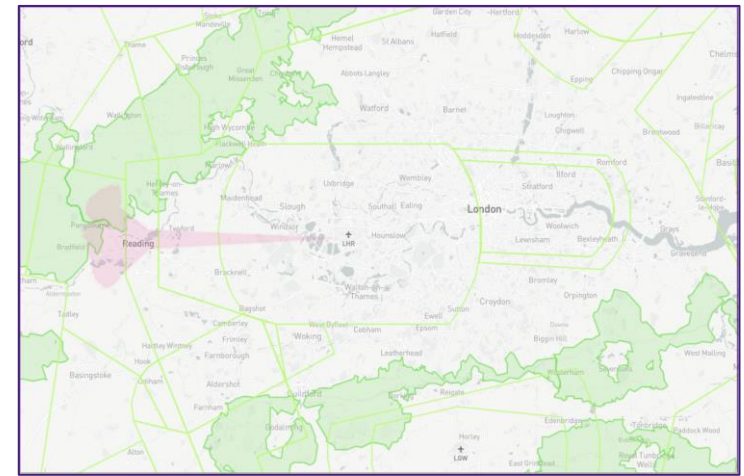
Vectored Arrivals Option J: 17-21nm from the runway end



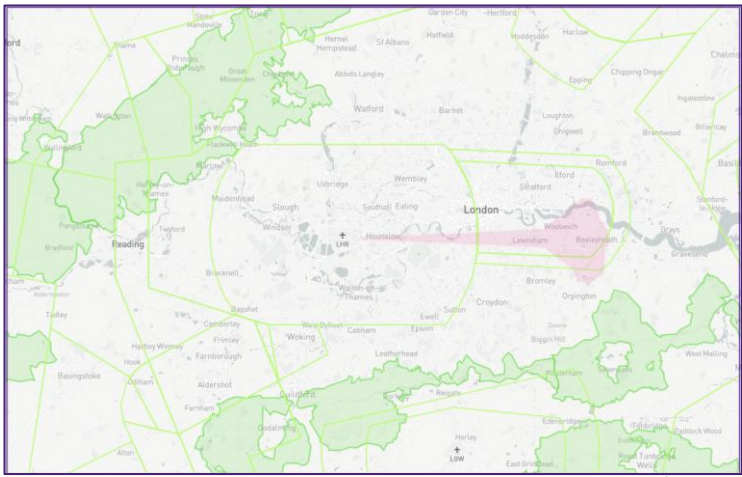
09L Option J



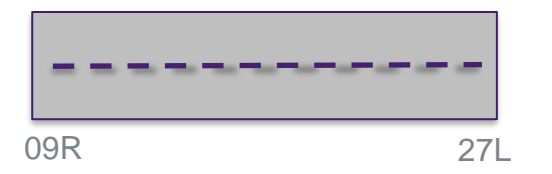
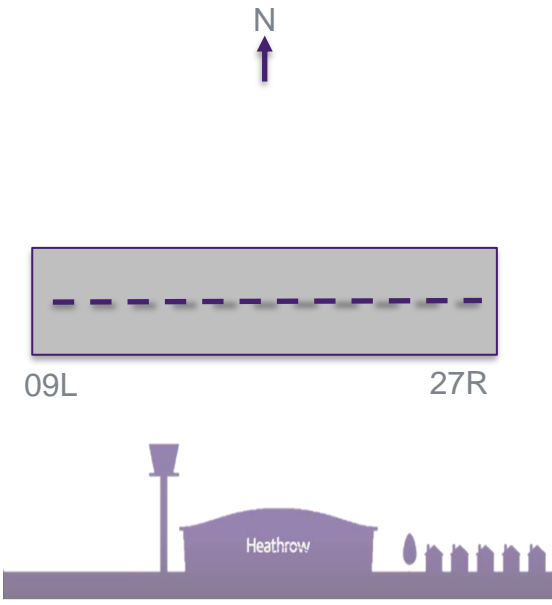
27R Option J



09R Option J

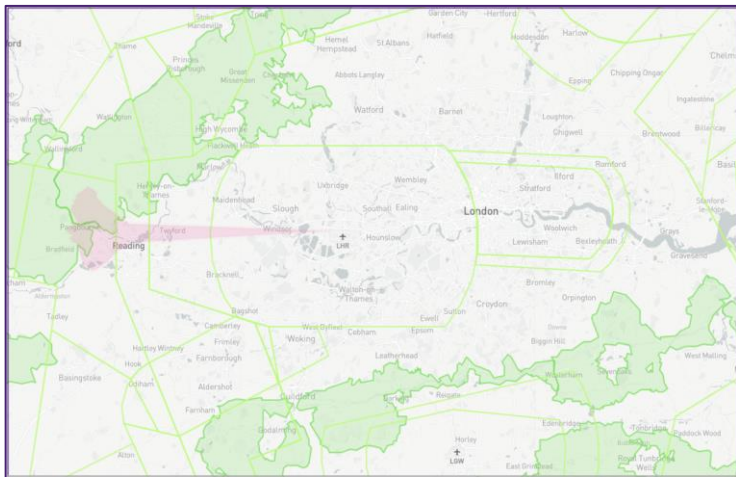


27L Option J

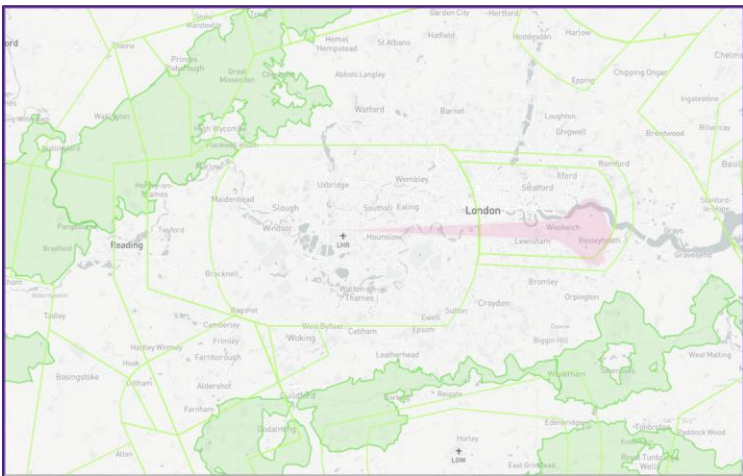


These options have aircraft joining the final approach between 17 and 21 nautical miles.

Vectored Arrivals Option K: 18-22nm from the runway end



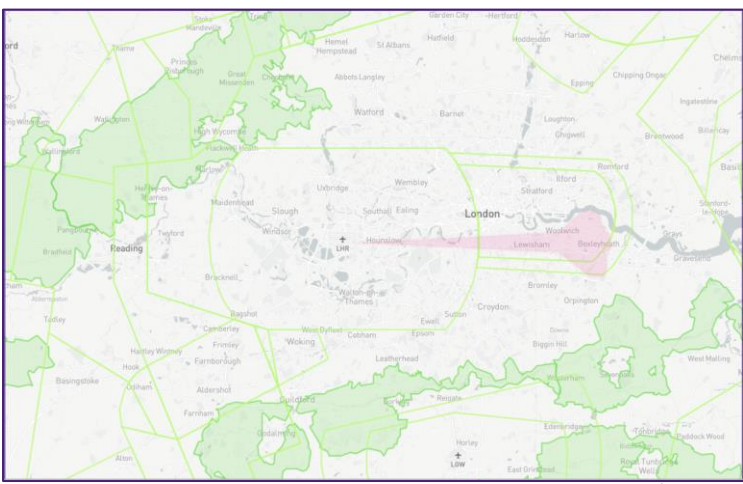
09L Option K



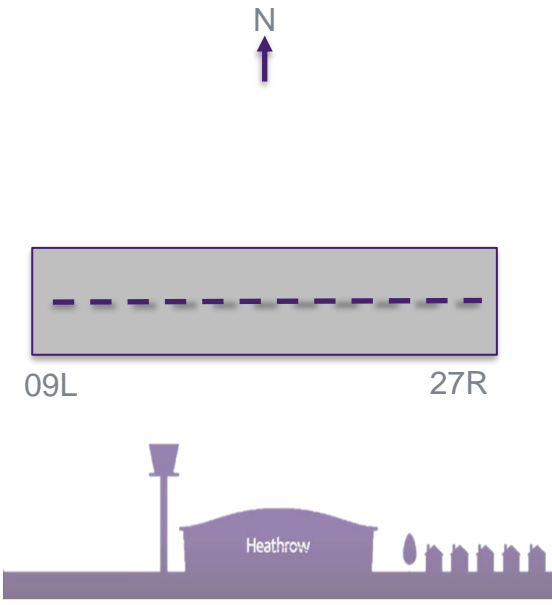
27R Option K



09R Option K



27L Option K



09L

27R



09R

27L

These options have aircraft joining the final approach between 18 and 22 nautical miles.



Appendix 5 – DPE Summary Tables

PBN Departures: Runway 27L Summary DPE Results

	'Do Nothing'	Option A	Option B	Option C	Option D	Option E	Option F	Option G	Option H
Design Principle									
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Red	Green	Green	Green	Green	Green	Green	Green	Green
4	Red	Red	Yellow	Green	Green	Red	Yellow	Red	Red
5	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow
10	Grey	Green	Green	Yellow	Yellow	Green	Yellow	Green	Green
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Runway 27L is the southern runway, used for departures when on westerly operations

PBN Departures: Runway 27R Summary DPE Results

	'Do Nothing'	Option A	Option B	Option C	Option D	Option E	Option F	Option G	Option H
Design Principle									
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Red	Green	Green	Green	Green	Green	Green	Green	Green
4	Red	Red	Yellow	Green	Yellow	Yellow	Yellow	Red	Yellow
5	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
10	Grey	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Yellow
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Runway 27R is the northern runway, used for departures when on westerly operations

PBN Departures: Runway 09L Summary DPE Results

	'Do Nothing'	Option A	Option B	Option C	Option D	Option E	Option F	Option G	Option H	Option I	Option J
Design Principle											
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
4	Yellow	Red	Green	Green	Green	Yellow	Yellow	Red	Red	Yellow	Yellow
5	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow
10	Grey	Green	Green	Green	Green	Yellow	Green	Green	Green	Green	Green
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Runway 09L is the northern runway, used for departures when on easterly operations

PBN Departures: Runway 09R Summary DPE Results

	'Do Nothing'	Option A	Option B	Option C	Option D	Option E	Option F	Option G	Option H	Option I	Option J
Design Principle											
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
4	Red	Red	Yellow	Green	Green	Yellow	Yellow	Red	Red	Yellow	Yellow
5	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Yellow
10	Grey	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Green	Green	Yellow
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Runway 09R is the southern runway, used for departures when on easterly operations

PBN Arrivals: Runway 27L Summary DPE Results

	'Do Nothing'	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
DP																								
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
4	Yellow	Yellow	Red	Green	Green	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
5	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Green	Green	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Green	Yellow	Green	Yellow	Yellow	Yellow	Yellow
10	Grey	Green	Green	Yellow	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Green	Yellow	Green	Yellow	Yellow	Yellow	Yellow
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Green	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Runway 27L is the southern runway, used for arrivals when on westerly operations

PBN Arrivals: Runway 27R Summary DPE Results

	'Do Nothing'	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
DP																									
1																									
2																									
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4																									
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10																									
11																									
12																									

Runway 27R is the northern runway, used for arrivals when on westerly operations

PBN Arrivals: Runway 09L Summary DPE Results

	'Do Nothing'	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	
DP																							
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
4	Yellow	Yellow	Red	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
5	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Red	Green	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
10	Grey	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Red	Green	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
11	Yellow	Green	Green	Yellow	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Green
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Runway 09L is the northern runway, used for arrivals when on easterly operations

PBN Arrivals: Runway 09R Summary DPE Results

	'Do Nothing'	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
DP																						
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Green	Yellow	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
4	Grey	Yellow	Red	Green	Green	Green	Green	Yellow	Green	Green	Yellow	Green	Green	Yellow	Yellow	Red	Yellow	Green	Green	Yellow	Green	Green
5	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Green	Red	Green	Yellow	Green	Green	Green	Green	Green	Green	Yellow	Green	Green	Green
10	Grey	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Green	Red	Green	Yellow	Green	Green	Green	Green	Green	Green	Yellow	Green	Green	Green
11	Yellow	Green	Green	Green	Green	Green	Yellow	Yellow	Green	Green	Green	Yellow	Green	Green	Green	Yellow	Green	Green	Green	Green	Green	Green
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Runway 09R is the southern runway, used for arrivals when on easterly operations

PBN Arrivals: All Summary Tables



DP	Do Nothing	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	
1																							
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

09L Arrivals



09L 27R



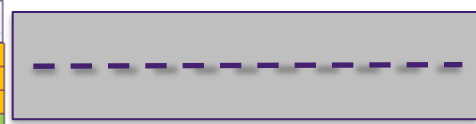
Heathrow

DP	Do Nothing	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

27R Arrivals

DP	Do Nothing	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U		
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

09R Arrivals



09R 27L

DP	Do Nothing	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

27L Arrivals

Vectored Arrivals: Runway 27L Summary DPE Results

	'Do Nothing' (8-18nm)	Option A (8-12nm)	Option B (9-13nm)	Option C (10-14nm)	Option D (11-15nm)	Option E (12-16nm)	Option F (13-17nm)	Option G (14-18nm)	Option H (15-19nm)	Option I (16-20nm)	Option J (17-21nm)	Option K (18-22nm)
Design Principle												
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
4	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
5	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
10	Grey	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Green	Green	Green	Green
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Runway 27L is the southern runway, used for arrivals when on westerly operations

Vectored Arrivals: Runway 27R Summary DPE Results

	'Do Nothing' (8-18nm)	Option A (8-12nm)	Option B (9-13nm)	Option C (10-14nm)	Option D (11-15nm)	Option E (12-16nm)	Option F (13-17nm)	Option G (14-18nm)	Option H (15-19nm)	Option I (16-20nm)	Option J (17-21nm)	Option K (18-22nm)
Design Principle												
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
4	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
5	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
10	Grey	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Green	Green	Green	Green
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Runway 27R is the northern runway, used for arrivals when on westerly operations

Vectored Arrivals: Runway 09L Summary DPE Results

	'Do Nothing' (8-18nm)	Option A (8-12nm)	Option B (9-13nm)	Option C (10-14nm)	Option D (11-15nm)	Option E (12-16nm)	Option F (13-17nm)	Option G (14-18nm)	Option H (15-19nm)	Option I (16-20nm)	Option J (17-21nm)	Option K (18-22nm)
Design Principle												
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
4	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
5	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6	Red	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
10	Grey	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Runway 09L is the northern runway, used for arrivals when on easterly operations

Vectored Arrivals: Runway 09R Summary DPE Results

	'Do Nothing' (8-18nm)	Option A (8-12nm)	Option B (9-13nm)	Option C (10-14nm)	Option D (11-15nm)	Option E (12-16nm)	Option F (13-17nm)	Option G (14-18nm)	Option H (15-19nm)	Option I (16-20nm)	Option J (17-21nm)	Option K (18-22nm)
Design Principle												
1	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
2	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
3	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
4	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
5	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
6	Red	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
7	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
8	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
9	Grey	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
10	Grey	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green
11	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
12	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

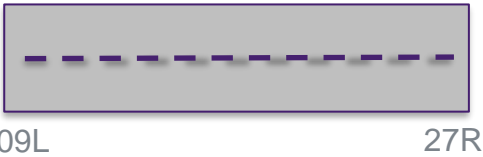
Runway 09R is the southern runway, used for arrivals when on easterly operations

Vectored Arrivals: All Summary Tables



	'Do Nothing' (8-18nm)	Option A (8-12nm)	Option B (9-13nm)	Option C (10-14nm)	Option D (11-15nm)	Option E (12-16nm)	Option F (13-17nm)	Option G (14-18nm)	Option H (15-19nm)	Option I (16-20nm)	Option J (17-21nm)	Option K (18-22nm)
Design Principle												
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09L Vectored Arrivals



09L

27R



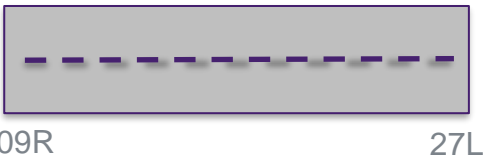
Heathrow

	'Do Nothing' (8-18nm)	Option A (8-12nm)	Option B (9-13nm)	Option C (10-14nm)	Option D (11-15nm)	Option E (12-16nm)	Option F (13-17nm)	Option G (14-18nm)	Option H (15-19nm)	Option I (16-20nm)	Option J (17-21nm)	Option K (18-22nm)
Design Principle												
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27R Vectored Arrivals

	'Do Nothing' (8-18nm)	Option A (8-12nm)	Option B (9-13nm)	Option C (10-14nm)	Option D (11-15nm)	Option E (12-16nm)	Option F (13-17nm)	Option G (14-18nm)	Option H (15-19nm)	Option I (16-20nm)	Option J (17-21nm)	Option K (18-22nm)
Design Principle												
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09R Vectored Arrivals



09R

27L

	'Do Nothing' (8-18nm)	Option A (8-12nm)	Option B (9-13nm)	Option C (10-14nm)	Option D (11-15nm)	Option E (12-16nm)	Option F (13-17nm)	Option G (14-18nm)	Option H (15-19nm)	Option I (16-20nm)	Option J (17-21nm)	Option K (18-22nm)
Design Principle												
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27L Vectored Arrivals

Step 2A Feedback and DPE Update Sessions

Report of sessions between the Heathrow Airspace Modernisation Team and community stakeholder group representatives (22 – 27 March 2023, 3 x 2-hour online sessions, Microsoft Teams)

Attendees:

Stakeholder Group / Organisation:	Heathrow Representatives:
<p>Airspace Change Organising Group (ACOG) Bromley Council Buckinghamshire Council Campaign Against Gatwick Noise Emissions (CAGNE) Chilterns Conservation Board Chiltern Society CPRE Oxfordshire Englefield Green Action Group (EGAG) Environment Agency Forest Hill Society Friends of the Earth (for Hounslow Borough) Friends of Richmond Park (FRP) Hammersmith and Fulham Council Harmondsworth and Sipson Residents Association (HASRA) Heathrow Association for the Control of Aircraft Noise (HACAN) Heathrow Strategic Planning Group (HSPG) Local Authorities Aircraft Noise Council (LAANC) / Richmond and Wandsworth Council Local Resident Walton-on-Thames, Surrey London Borough of Ealing London Borough of Bexley London Borough of Hackney London Borough of Southwark Molesey Residents Association (MRA) Mole Valley District Council National Trust Noise and Airspace Community Forum (NACF), Independent Chair Plane Hell Action Reigate and Banstead Borough Council Richmond Heathrow Campaign (RHC) Royal Borough of Windsor and Maidenhead Council (RBWM) Sevenoaks District Council Slough Borough Council Spelthorne Borough Council Surrey County Council Teddington Action Group (TAG) The Holly Lodge Centre The Royal Parks The Windlesham Society Watford Borough Council Westbourne Park Road East Resident's Association (WPRERA)</p>	<p>[Redacted]</p> <p>Independent Chair: [Redacted]</p>

Throughout this note comments and questions from the 52 attendees are attributed to the organisation they represent, rather than the individual.

A slide pack was presented during the discussion and shared with stakeholders afterwards, with a Technical Appendix including additional information. The structure of the report reflects the agenda and order in which the slides were presented, but key discussion points have been grouped into sub-sections where appropriate.

1. Purpose of the Session
2. Step 2A Feedback
3. Heathrow's Approach to the Design Principle Evaluation (DPE)
4. Design Principle Evaluation (DPE): Methodology and Results
5. AOB
6. Next Steps and Closing Remarks

Notes from the Discussion:

1. Purpose of the Session

1.1	Heathrow	Welcomed stakeholders and set out that the purpose of the session is to: a) share a summary of the feedback received from the Step 2A engagement on the Comprehensive List of Options (CLOO), and b) to explain the approach Heathrow has taken to the Design Principle Evaluation (DPE), and a summary of the DPE results.
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2. Step 2A Feedback

Consideration of parks and gardens

2.1	CPRE Oxfordshire	Commented that the CLOO appears to show some flight paths overflying parks and green space, which are quiet areas, to avoid densely populated areas. Queried whether this was government policy.
2.2	Heathrow	Agreed that ambient background noise of less densely populated areas is generally lower, and therefore intrusion from aviation noise can be greater. Referred to Air Navigation Guidance 2017 (ANG17) which states that, where possible, flight path options should aim to avoid AONBs and National Parks. The Civil Aviation Authority's (CAA) Airspace Change Guidance (CAP1616) also suggests that sponsors consider areas identified through community engagement for their tranquillity. Highlighted that there is currently no policy that directly supports the overflight of areas of low population rather than areas of dense population. However, the government's policy focuses on limiting and, where possible, reducing the number of people in the UK adversely affected by aircraft noise and the impacts on health and quality of life associated with it.

Comprehensive List of Options maps

2.3	FRP	Queried why there are far fewer Performance Based Navigation (PBN) arrival options from the north than from the south. Suggested that arrival routes from the north would be required for arrivals from North America. Suggested that most arrivals from North America today come from the Bovingdon stack (to the north-west) but the flight path options result in long routing round the west and south of the airport, even for the 27R arrivals. Asked what proportion of flights (arrivals and departures) are to/from the north today. Asked if the 'Do Nothing' options for arrivals and departures are for each runway end. Asked if the 'Do Nothing' options include the introduction of PBN and whether Heathrow has considered 'Do Minimum' options that replicate the current flight paths but use PBN.
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2.4	Plane Hell Action	The CLOO appears to show a bias towards more PBN departure routes to the south-east, to avoid overflying the north-east.
2.5	TAG	Asked if Heathrow is considering a 'Do Nothing' option with some additional changes to enable airspace modernisation.
2.6	Heathrow	<p>Responded to FRP's point stating that the Atlantic Ocean jet stream determines whether aircraft arriving from North American destinations join the holding stacks to the north or south of the airport, with the majority joining the latter. Stated that there are fewer PBN arrival route options from the north than the south due to the location of Northolt and London City Airports and the surrounding areas of dense population. Clarified that there is no southerly bias to the airspace design, but that the Design Principles relating to noise and reducing adverse effects on people inevitably drive the design of more arrival options from the south and west where population is less dense. Stated that despite the CLOO including more options to/from the south, this does not necessarily mean that there will be more planes in the future departing and arriving over communities to the south, as the options still need to undergo rigorous analysis. Committed to checking which stack US arrivals typically fly in from.</p> <p>Confirmed that there are 'Do Nothing' options for PBN departures, PBN arrivals and vectored arrivals for each runway end (12 in total) and these are shown in the Technical Appendix to this engagement material. Clarified that these options assume no use of PBN and that operations will continue in the same way as today. These are evaluated in their own right in the DPE and retained throughout the ACP for comparison purposes as a baseline.</p> <p>Explained that the CLOO includes options (e.g., DP9a) that introduce PBN but keep flight paths similar to today's operations. Clarified that these options are not termed 'Do Minimum' because the CAA has confirmed they only require a 'Do Minimum' option where there is no baseline of current operations against which to compare options.</p>

Population overflown

2.7	The Windlesham Society	Concerned that communities will be overflown by multiple arrival and departure routes from Heathrow.
2.8	Buckingham shire Council	Asked for clarity around Heathrow's consideration of communities that are not currently overflown but are still impacted by noise.
2.9	MRA	Asked if Heathrow is considering overflying areas of low population such as parks or reservoirs late at night to avoid noise disturbance to communities.
2.10	Heathrow	Stated that the options are being assessed in the DPE and Initial Options Appraisal (IOA) on a directional basis (i.e. looking at options for one runway operating in one direction). When system options (arrivals + departures, easterly + westerly operations) are designed in Stage 3, it will be possible to look at avoiding overflying the same communities with arrivals and departures as far as possible. Heathrow will continue to work with other airports to understand the cumulative impact of the new flight paths to and from surrounding airports.

		Stated that there is ongoing work looking at various concepts for managing night flights, such as bespoke late running departure routes. More detailed analysis on night flight concepts will take place in Stage 3.
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3. Heathrow's Approach to the Design Principle Evaluation (DPE)

Weighting criteria / shortlisting options

3.1	FRP	Asked how many options there are in the CLOO. Asked what weighting is applied to the Design Principles in carrying out the DPE. Asked what Heathrow expects to achieve from the DPE since options are not being discounted based on the results.
3.2	London Borough of Ealing / HSPG	Asked whether any weighting criteria had been applied to the Design Principles in the DPE. Stated that communities who are already exposed to noise will be particularly sensitive to any increases in noise exposure levels.
3.3	RBWM	Asked at what stage the options will be weighted to explore trade-offs between altitude-based priorities.
3.4	HACAN	Asked if all options in the CLOO will be taken forward to be built into system options.
3.5	EGAG	Pointed out that Heathrow's approach to using percentiles will result in most of the options being assessed as 'partially met' and asked how Heathrow will then prioritise the options.
3.6	Reigate & Banstead Council	Asked how the options are going to be evaluated in the IOA in terms of financial costs and health costs, and whether any form of shortlisting will take place.
3.7	Heathrow	<p>Stated that there are 181 options in total:</p> <ul style="list-style-type: none"> • 93 PBN arrivals, • 40 groups of PBN departures (6 routes per group), • 48 vectored arrivals <p>Confirmed that the DPE summary results for all of the options are shown in the Technical Appendix to this presentation.</p> <p>Stated that the purpose of the DPE is to perform a high-level assessment to understand how the options perform against the Design Principles. Stated that there is no requirement in CAP1616 for sponsors to discontinue or shortlist options as a result of the DPE. Acknowledged that some other sponsors have discounted options at this stage, but that Heathrow's ACP involves four runway ends and is of a larger scale and more complex. The mostly amber ("partially met") outcome of options in Heathrow's DPE reflects the uncertainty that remains due to other considerations including the wider programme, NATS' design of a future arrivals mechanism, and other airports' ACPs. Therefore, Heathrow needs to view the DPE results alongside the more detailed IOA results at Step 2B to better understand the likely impact of the options. This will inform the process for designing system options in Stage 3 and shortlisting the options.</p> <p>Stated that no weighting has been applied to the Design Principles in the DPE. Explained that the IOA includes metrics related to the government's altitude-based priorities, as well as metrics from DfT's Transport Appraisal Guidance (TAG) to assess potential health, air quality and environmental</p>

		<p>costs. Stated their intention to quantify as much as possible in the IOA to understand how the options would perform.</p> <p>The method for building system options and shortlisting options is in development and Heathrow committed to sharing this with stakeholders once it has been agreed.</p>
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The percentiles approach

3.8	CPRE Oxfordshire	<p>Asked for clarification around the percentiles approach, specifically the consideration of government policy in the 'not met' evaluation for population overflow against parks and gardens.</p>
3.9	London Borough of Ealing / HSPG	<p>Suggested that the percentile split is very broad and queried whether 10% increments might give more granularity in the data.</p>
3.10	TAG	<p>Queried whether the RAG approach is appropriate, given the allocation of "met" and "not met" implies a greater difference between the values than the narrow range shown in the illustrative example shown on slide 29 of the presentation.</p> <p>Queried how Heathrow will achieve carbon savings of 20% and asked when carbon impact assessments will occur, highlighting that further impact analysis would help identify any potential trade-offs between noise and carbon.</p>
3.11	RHC	<p>Asked whether the percentile ranks are being used to discount options.</p>
3.12	Chilterns Conservation Board	<p>Commented that the DPE methodology is useful as it shows the full list of metrics and criteria assessed, and where potential trade-offs may occur.</p>
3.13	Heathrow	<p>Heathrow explained that CAP1616 is guidance for sponsors on how to change the airspace in compliance with ANG17 and includes reference to other policies such as the Noise Policy Statement for England. Explained that noise metrics consider both altitude-based priorities, meaning that noise is prioritised below 7,000ft and government policy to limit the number of people that are adversely affected by noise. Therefore, government policy steers sponsors towards avoiding areas of dense population, however avoiding AONBs is considered 'where possible' as well as tranquillity and biodiversity metrics set out in CAP1616.</p> <p>Stated that slide 29 is an illustrative example of Heathrow's approach to assigning a RAG status to each option and that some metrics have a narrow range across the options while others have a wider range. The percentile approach was designed as a standard methodology to rank the options from highest to lowest performing, rather than ranking each option against the baseline alone. Clarified that an option assigned to 100% does not mean that there is a 100% increase in that metric, it just means that the option was the worst performing against the design principle.</p> <p>Confirmed that no options will be eliminated based on the DPE results alone and all options will be assessed in the IOA: we will review both sets of results to understand the likely impact of the options before discounting any.</p>

Consideration of the future use of PBN

3.14	FRP	<p>Suggested that there are currently 14 PBN arrivals in the early morning period (04:30–06:00) due to the fleet having few suitably equipped aircraft and trained crews. In 2040 nearly all of the fleet using Heathrow will be capable of using PBN, reducing reliance on the use of vectored arrivals. Asked whether PBN will be used in the future at other times of the day.</p> <p>Asked whether the DPE and IOA are based on current or future modes of operation. Asked when Heathrow is forecasting for PBN arrivals throughout the day.</p> <p>Asked if the vectored arrivals network convergence point must be at 8 nautical miles.</p>
3.15	Plane Hell Action	<p>Stated that since 2016, the early morning arrivals (04:30–06:00) have used PBN flight paths with little variation which causes noise disturbance.</p>
3.16	London Borough of Ealing / HSPG	<p>Asked how PBN will be used for future arrivals operations.</p>
3.17	MRA	<p>Asked whether more departures will use PBN technology than today.</p>
3.18	Heathrow	<p>Clarified that the numbers of aircraft using PBN today is not based on aircraft equipage, since most aircraft are capable of flying PBN arrival routes.</p> <p>Clarified that all new departure flight path options must be designed to a PBN specification. Explained that the PBN departure options are grouped into 6 routes per group as departures need to be sufficiently separated from one another to ‘work together’ operationally.</p> <p>Stated that currently, PBN technology is not being used for arriving aircraft, apart from on final approach. Explained that PBN arrival options are evaluated as individual route options. Clarified that using the early morning period for the evaluation of PBN arrivals options does not mean that Heathrow is committing to only using PBN for future operations in the early morning period. Our assumption for this ACP is that all aircraft will be able to fly all routes, but that vectoring will be needed to achieve runway throughput during the busier daytime period. Stated that the long-term goal of airspace modernisation is to increase systemisation as tools and technology improve and that it might be possible to perform a higher landing rate in the future using PBN.</p> <p>Confirmed that the ACP is for Heathrow’s existing two runways with 480,000 ATMs a year, as per the government’s cap. Explained that current operational practices of using a technically enhanced arrival mechanism (TEAM) and runway alternation are assumed to remain part of the future operation for arriving aircraft and simultaneous approaches will be considered as system options are designed. Stated that the Stage 3 Full Options Appraisal (FOA) will assess the options as they are likely to be operated in practice and this will be presented to stakeholders at the Public Consultation.</p>

		Responded to FRP's point that 8 nautical miles is the closest point that aircraft can join the final approach, but that this ranges up to 20-22 nautical miles, so the vectored arrivals options are being assessed within this range.
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4. Design Principle Evaluation (DPE): Methodology and Results

Design Principle 2: Policy

4.1	TAG	Suggested that ANG17 should legally override all other criteria in Design Principle 2, including the need to meet the Airspace Modernisation Strategy (AMS). Recommended using ANG17 as a "quality threshold" meaning that if an option does not meet ANG17, it should be discontinued from the process.
4.2	Heathrow	Explained that Design Principle 2 has two rows in the summary table as the CAA requires sponsors to conduct a separate assessment of options against the objectives of the AMS. Committed to provide a response to TAG on their concerns around the consideration of ANG17 in the DPE and IOA.

Design Principle 6: Provide predictable and meaningful respite

4.3	EGAG	Asked why it is not possible at this stage to assess options against Design Principle 6.
4.4	Heathrow	Stated that at Stage 2, Heathrow is assessing options as groups of routes or individual routes in isolation. To explore concepts for providing predictable and meaningful respite, system options are needed to understand noise differentials and the impact of noise from arrivals and departures, and from westerly and easterly operations on communities. We also need more detail on likely future airspace designs of surrounding airports.

Consideration of altitude-based priorities and air quality

4.5	FRP	Query around measurement of overflight up to 3,000ft for assessing impacts on SPAs, SACs and SSSIs. Asked whether Heathrow will be sharing the criteria for the DPE of all 12 Design Principles and the overall RAG result for each option.
4.6	EGAG	Stated that air quality should be assessed up to 3,000ft (1000m) as suggested in an ICAO paper. Reminded that they had previously asked Heathrow to justify their selection of the 1,000ft metric for the air quality assessment of flight path options.
4.7	Buckingham shire Council	Asked what measurement of air quality is being used in the DPE.
4.8	MRA	Asked for justification on the use of 1,000ft for the air quality metric.
4.9	WPRERA	Asked what parameters will be used for further assessment of air quality, particularly at night, commenting that this should be greater than 1,000ft.
4.10	Heathrow	The DPE includes a qualitative assessment of whether the option laterally changes flight paths below 1,000ft. This is based on ANG17 which states that air quality could be affected if flight paths are changed below 1,000ft. Committed to provide stakeholders with a note explaining the rationale for the 1,000ft air quality assessment.

		<p>Stated that the DPE assesses whether an option overflies SACs, SPAs and SSSIs below 3,000ft only. But the IOA will look at the overflight of these designated areas in more detail.</p> <p>Explained that the IOA will include more detailed analysis at 2,000ft and 3,000ft to show the potential impact on areas newly overflown, and will use TAG metrics to quantitatively assess impacts to health and quality of life.</p> <p>If an air quality impact assessment or health impact assessment is required, it will be conducted at the FOA.</p> <p>Stated that the engagement pack appendices include the DPE methodology for each Design Principle. The appendices include DPE results in summary tables showing the RAG status (“met”, “partially met” or “not met”) assigned to each option for each design principle. The full results breakdown for the options will be included in Heathrow’s Stage 2 submission to the CAA.</p>
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Methods and Metrics

4.11	TAG	<p>Commented that some of Heathrow’s analysis is based on people affected by a single flight contour and asked if more metrics are being considered. Asked at what stage the likely change in noise levels for the options will be assessed and how this will be presented to stakeholders, for example using maps.</p>
4.12	FRP	<p>Asked whether the Richmond Park metric based on overflight uses an average and involves both quantitative and qualitative assessment.</p> <p>Asked for confirmation on the definition of overflight.</p>
4.13	RHC	<p>Requested clarity on whether the options have been evaluated on a single flight traffic volume for each flight path.</p>
4.14	Heathrow	<p>Stated that the IOA includes additional metrics such as N60 and N65 to provide more detailed analysis, including an indication of changes in noise levels. Stated that Heathrow is considering how best to present this information, but that images to show changes in noise levels are possible.</p> <p>Explained that the overflying Richmond Park assessment is both qualitative and quantitative. Confirmed that the overflight cone is based on the CAA’s definition of overflight which assumes a 5.5% climb gradient and 48.5 degree cone either side. Confirmed that the overflight metric considers whether Richmond Park would be overflown at least twenty times a day on average for PBN departures and vectored arrivals options. Explained that as the PBN arrivals options are assessed during the early morning period, overflight of once per day is used as a more suitable metric since there are only 14 flights per day during this time.</p> <p>Responded to RHC that the track miles metric is used as an example on slide 29, showing track miles for one aircraft movement from each runway end to network points for all routes. One aircraft movement for each option is compared to the baseline data for one flight on each route in 2019.</p>

5. AOB

5.1	Chilterns Conservation Board	Asked whether the ACP is considering the Chilterns AONB and Surrey Hills AONB extension proposals.
5.2	Heathrow	Committed to following up with Chilterns Conservation Board to request information on the AONB extension proposals for future consideration in the assessment of airspace options.

5.3	London Borough of Ealing / HSPG	In addition to considering altitude-based priorities, asked whether Heathrow is considering other methods of managing aircraft noise, such as demand management, size of aircraft or size of aircraft load since this would be beneficial for communities close to the airport.
5.4	Heathrow	Responded that these other considerations lie outside the scope of the ACP, but that the IOA will consider aircraft performance. Frequency of overflight at various altitudes will be shared at the Stage 3 Public Consultation.

5.5	HASRA	Asked if Hillingdon Council has responded to the Stage 2 feedback form.
5.6	Heathrow	Stated that Hillingdon Council representatives were engaged at Stage 2 but that they did not submit a feedback response.

5.7	CAGNE	Referred to a recent NATS report on intelligent approaches and asked whether this would increase capacity for arrivals and the use of Continuous Descent Operations (CDO) at Heathrow.
5.8	Heathrow	Heathrow responded that they had not seen the report, but that Heathrow was the first airport to introduce an intelligent, time-based spacing approach to maintain aircraft rates during periods of high wind. Stated that this approach allows for CDO but does not increase the landing rate.


6. Next Steps and Closing Remarks

6.1	Heathrow	Thanked the stakeholders and the Heathrow team for their time. Asked stakeholders to send any comments or questions to the Airspace Inbox.
6.2	CAGNE	Asked when maps will be provided showing the flight path options overlaid on today's existing flight paths.
6.3	RHC	Requested that communities have time to review the Stage 2 documentation, including the IOA output, before Heathrow upload it to the CAA portal.
6.4	Heathrow	Stated that Heathrow will show maps of each system option against today's flight paths at the Stage 3 Public Consultation. Highlighted that the 'Do Nothing' options shown in the Technical Appendix to this engagement material show swathes of departing and arriving aircraft today. Explained that timescales are tight but committed to sharing summaries of the DPE and IOA outputs before the Stage 2 submission deadline.

Step 2A Feedback and DPE Update Sessions

Report of sessions between the Heathrow Airspace Modernisation Team and industry stakeholder group representatives (20–27 March 2023, 4 x 1.5-hour online sessions, Microsoft Teams).

Attendees:

Stakeholder Group / Organisation:	Heathrow Representatives:
Airspace Change Organising Group (ACOG) American Airlines Blackbushe Airport Ltd British Airline Pilots Association (BALPA) British Airways Delta Farnborough Airport Future Aviation Industry Working Group on Airspace Integration (FAIWG-AI) Gatwick Airport Luton Airport Southend Airport Lufthansa Group (Swiss) Ministry of Defence – Defence Airspace and Air Traffic Management (MoD DAATM) National Air Traffic Services (NATS) EN-Route (NERL) RAF Northolt Stansted Airport Virgin Atlantic	

Throughout this note comments and questions from the 23 attendees are attributed to the organisation they represent, rather than the individual.

A slide pack was presented during the discussion and shared with stakeholders afterwards, with a Technical Appendix including additional information. The structure of the report reflects the agenda and order in which the slides were presented, but key discussion points have been grouped into subsections where appropriate.

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2. Step 2A Feedback
3. Heathrow’s Approach to the Design Principle Evaluation (DPE)
4. Design Principle Evaluation (DPE): Methodology and Results
5. AOB
6. Next Steps and Closing Remarks

Notes from the Discussion:

1. Purpose of the Session

1.1	Heathrow	Welcomed stakeholders and set out that the purpose of the session is to: <ol style="list-style-type: none"> a) share a summary of the feedback received from the Step 2A engagement on the Comprehensive List of Options (CLOO), and b) to explain the approach Heathrow has taken to the Design Principle Evaluation (DPE), and a summary of the DPE results.
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2. Step 2A Feedback

2.1	Stansted Airport	<p>Asked whether the 'Do Nothing' options included in the DPE are viable options that could form part of the final solution.</p> <p>Also asked, out of interest, whether community group stakeholders are supportive of the new options to avoid overflying Richmond Park.</p>
2.2	Heathrow	<p>Stated that the Civil Aviation Authority's (CAA) ACP process, CAP1616, requires sponsors to include a 'Do Nothing' option for arrivals and departures, to be evaluated at Stage 2 in their own right. If 'Do Nothing' is discounted as an option at this stage, it will move to Stage 3 as a baseline comparator in the analysis.</p> <p>Explained that two environmental stakeholder groups had identified Richmond Park as a site for specific consideration, owing to its tranquil characteristics and biodiversity. Stated that Heathrow has recently engaged with stakeholders on the matter separately, including the new options, and that so far only limited feedback had been received.</p>

3. Heathrow's Approach to the Design Principle Evaluation (DPE)

3.1	American Airlines	<p>Asked for clarification around the acronyms IOA and FOA.</p> <p>Asked for clarification around the method for quantitatively assessing the financial impact of the options. Stated that they would like to view quantitative data assessing the costs and benefits associated with likely trade-offs, such as fuel burn and noise.</p>
3.2	Heathrow	<p>Stated that IOA refers to Initial Options Appraisal at Step 2B, FOA refers to the Stage 3A Full Options Appraisal and that at Stage 4A there will be a Final Options Appraisal. Explained that the three phases of appraisal will demonstrate the impact and change that the list of flight path options could have compared to a baseline, as required by CAP1616.</p> <p>Clarified that the DPE includes quantitative and qualitative assessment of how the options perform against the Design Principles. The phases of appraisal, starting with the IOA at Step 2B, introduce metrics that provide more detail on the impact of options and monetise the potential impacts of the changes. Stated that the IOA aims to quantify as much as possible and that a summary of the results will be shared with stakeholders in Summer 2023. Cautioned that IOA will involve a partial analysis, as Stage 3 includes work to design system options for FOA to give more detailed information.</p>

4. Design Principle Evaluation (DPE): Methodology and Results

4.1	Stansted Airport	<p>Asked if the DPE results will complement the IOA results.</p>
4.2	Heathrow	<p>Stated that the IOA includes both quantitative and qualitative analysis using a more detailed and wider ranging set of metrics than the DPE. The DPE and IOA results will be reviewed together at Step 2B, to help identify the best performing options across a wide range of measures. Explained that this will inform the process for designing cohesive system options in Stage 3 and for shortlisting options.</p>

5. AOB

5.1	BALPA	<p>Asked why Paris Charles de Gaulle (CDG) Airport uses NADP1 as standard operation mode for aircraft.</p> <p>Asked if Heathrow's work on NADPs will be made publicly available and who the point of contact is for that work.</p>
5.2	American Airlines	<p>Commented that Heathrow's NADP research with the CAA should engage Boeing and Airbus, as large aircraft manufacturers, to consider their analysis on heavier aircraft performance as this shows trade-offs between passenger load carrying capability and performance, and the impact of various climb speeds.</p>
5.3	Heathrow	<p>Explained that Heathrow's work has found 9 different variants of NADPs, and that Heathrow is working with the CAA to understand the pros and cons associated with each. Explained that following a community stakeholder group suggestion, Heathrow has commissioned the Chief Technical Noise Advisor at the CAA to undertake a Departures Study. Stated that the output of this research will be published by the CAA.</p> <p>Responded to American Airlines' point that Heathrow is very aware of the heavier aircraft profiles but will contact the CAA to understand how future airframes are being considered in their NADP research.</p>

6. Next Steps and Closing Remarks

6.1	Heathrow	<p>Thanked the stakeholders and the Heathrow team for their time. Asked stakeholders to send any comments or questions to the Airspace Inbox.</p>
6.2	NATS (NERL)	<p>Commented that the presentation material was clear and very comprehensive, and that it will be beneficial for them to read it at leisure once circulated after the session.</p>
6.3	American Airlines	<p>Thanked Heathrow for their engagement on this topic and for accommodating differences across time zones.</p>