London Biggin Hill Airport
RNAV (GNSS) Runway 21
ACP-2019-86

Stage 3 – CONSULTATION DOCUMENT

Date: 11th September 2023
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Glossary

Acronym	Meaning
ACP	Airspace Change Proposal
ANOMS	Automatic Noise Operations Monitoring System (Data source for all track density images in this document)
AMSL	Above Mean Sea Level
ATC	Air Traffic Control
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CTR	Control Zone
CTA	Control Area
DME	Distance Measuring Equipment (Ground based equipment)
GNSS	Global Navigation Satellite System
IAP	Instrument Approach Procedure (A conventional Approach using Ground Based or Satellite Based Information)
IF	Intermediate Fix
IFR	Instrument Flight Rules
ILS	Instrument Landing System (Ground based equipment)
LBHA	London Biggin Hill Airport
LCY	London City Airport
LNAV	Lateral Navigation (A Satellite based Approach)
LPV	Localiser Performance with Vertical Guidance (A Satellite based Approach)
MAP	Missed Approach Procedure
NATS	National Air Traffic Services

Acronym	Meaning
PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations (Rules for designing instrument approach and departure procedures)
PBN	Performance Based Navigation (Satellite Navigation)
RNAV	Area Navigation (Satellite Navigation)
VNAV	Vertical Navigation (A Satellite based Approach)
VOR	VHF Omnidirectional Ranging Beacon (Ground based equipment)

1 Introduction

1.1 Introduction

This document is written to provide information for anyone who wants to be involved in this consultation and is therefore written in plain English as far as is possible due to the technical nature of the subject.

If you would like to read all the documents that have been produced in support of the CAA Change Process they are available on the CAA Airspace Change Portal:

Link to: CAA AIRSPACE PORTAL - RNAV (GNSS) RUNWAY 21 ACP

1.2 Terminology

Radar Vectors – Radar vectors provided to an IFR aircraft inbound to London Biggin Hill Airport (LBHA).

ILS – A ground based Approach aid which provides lateral and vertical information to pilots to assist landing in poor weather conditions.

1.3 Explanation of Terms

1.3.1 What is an Instrument Approach Procedure?

An Instrument Approach Procedure (IAP) is a specified procedure a pilot can fly when the weather does not allow the pilot to fly visually, due to cloud or when the visibility is low. The pilot will use the aircraft navigation instruments to fly a specified procedure until the pilot is able to see the airfield, providing the visual references necessary to land. Alternatively, as is the case for over 90% of the LBHA IFR air traffic, aircraft may be provided with radar vectors provided by an ATC Radar unit. The published IAP will also incorporate a Missed Approach Procedure (MAP) in the event that a pilot does not consider a landing is possible.

1.3.2 What is a Missed Approach Procedure?

When an aircraft approaches an airfield on a published IAP, there will be a point at which a pilot must determine whether or not a safe landing can be achieved. The pilot may not have the airfield in sight due to low cloud or fog, or the aircraft may be poorly positioned when approaching a runway due to uncontrolled events, such as a strong gust of wind, the pilot will execute a Missed Approach Procedure. Alternatively, there may be an instruction passed from ATC to execute a MAP, for safety reasons. This is a standard part of the IAP which will allow the pilot to reposition the aircraft to go around for another approach or divert to another airport where conditions may be more favourable for a landing.

2 Why Are we Consulting?

2.1 Background

An Airspace Change Sponsor can initiate an airspace change by using the CAA process known as CAP 1616.

LBHA are responsible for providing the formal procedures into and out of the airport. In this change we have initiated, and as the notified sponsors of this change, we are looking to implement a new Instrument Approach Procedure for aircraft arriving at LBHA.

The current existing Instrument Approach Procedure and associated Missed Approach Procedure will shortly to be removed from use, as they use navigational facilities on the ground that are reaching the end of life, so will no longer be available. We need to replace them with modern procedures (based on satellites), to ensure we remain resilient. These procedures can be integrated into UK airspace, which is currently being modernised to incorporate new technologies, such a Satellite Navigation.

The introduction of an RNAV Approach will meet the requirements of the CAA Airspace Modernisation Strategy (AMS) and will remove dependency on ground-based navigation equipment which is currently being phased out in the UK.

Figure 1 – A VOR – an old navigation facility being removed at end of life

2.2 What This Consultation is About

- Introducing a new Instrument Approach Procedure, which includes the Missed Approach Procedure, will ensure the continued availability of approaches, when older navigation methods are no longer available. The new procedure will follow the existing approach made, and the change will not be discernible from the ground.

- The new Instrument Approach Procedure, which includes the Missed Approach Procedure, will not be required for over 99% of the time, as inbound aircraft receive radar vectors from Air Traffic Control, until established on the ILS. Radar vectoring is the most efficient way for the Radar Service provider to sequence air traffic. A Radar Service is available from the Thames Director radar unit for the operational hours of LBHA under contract. On the rare occasion that a radar service is not available, LBHA ATC will use the VOR/DME/ILS Approach, which will be replaced by the 21 RNAV Approach.

- There were only 17 occasions during 2021 and 10 occasions during 2022 when a pilot executed a Missed Approach Procedure. We expect similar numbers to execute the MAP in subsequent years.

- All other aircraft will continue to operate as they do today

2.3 What This Consultation is NOT About

- The establishment of Controlled Airspace.

- An increase in aircraft types, numbers, or environmental impacts.

- Increasing Airport Operating hours.

- Airport expansion.

- The Future Airspace Strategy Implementation – South, which is a much larger ACP involving all of the major airports in the South of England.

3 London Biggin Hill Airport - LBHA

3.1 Introduction

London Biggin Hill Airport is supported by one 1800m strip of tarmac which provides 2 runways for landing and take-off called Runway 21 and Runway 03.

Figure 2 – Runway 21 / 03

Due to the prevailing south-westerly wind and the availability of an Instrument Landing System (ILS) which is an aid to pilots in bad weather, most aircraft approach and land on Runway 21, approximately 80% of the time. In 2021, there were 14,901 landings on Runway 21 and 3,326 landings on Runway 03. In 2022, there were 19,229 landings on Runway 21 and 3,598 landings on Runway 03 (Source: Monthly Data supplied by LBHA to CAA).

3.2 Today's Operation

LBHA handled 36,763[1] aircraft movements in 2021 and 46,097 movements in 2022[2], comprising Business Jets, Light Aircraft, military aircraft and helicopters.

Of the total movements for 2021, 9,472 arriving aircraft made an Instrument Approach to Runway 21. These aircraft would normally be radar vectored by ATC

[1] Biggin Hill Airport Consultative Committee Minutes 01-22_BHACC_Minutes.pdf (bigginhillairport.com)
[2] Biggin Hill Airport Consultative Committee Minutes January-2023.pdf (bigginhillairport.com)

onto the ILS. All aircraft will make an Instrument Approach to Runway 21, as this is the only instrument approach available. Most will land on Runway 21, but some may visually manoeuvre to land on Runway 03. There were 8 occasions during 2021 when radar was not available. It is on these occasions that the 21 RNAV Approach would be utilised.

Of the total movements for 2022, 12,879 arriving aircraft made an Instrument Approach to Runway 21. These aircraft would normally be radar vectored by ATC onto the ILS. All aircraft will make an Instrument Approach to Runway 21, as this is the only instrument approach available. Most will land on Runway 21, but some may visually manoeuvre to land on Runway 03. There were only 2 occasions during 2022 when radar was not available. It is on these occasions that the 21 RNAV Approach would be utilised.

All of the aircraft conducting an Instrument Approach Procedure will make their initial approach to Runway 21, as this is the only Runway with an Instrument Approach Procedure at LBHA. If Runway 03 is in use due to the prevailing wind, the pilot will break off the Runway 21 Instrument Approach at approximately 2nm from the airfield, to position visually for Runway 03. Any pilots unable to land visually on Runway 03 will execute the MAP and conduct another approach or divert to another airfield where conditions are more favourable.

Of the 37,000 aircraft movements at LBHA throughout 2021, only 17 aircraft were recorded as having conducted a Missed Approach Procedure off Runway 21. Of the 46,000 movements in 2022, only 10 aircraft were recorded as having conducted a Missed Approach Procedure off Runway 21.

3.3 LBHA Arrivals

Aircraft arriving into LBHA utilise the high altitude en-route network structure (motorways in the sky), known as the Approach Transition. Traffic arriving at LBHA exit the network at a reporting point known as OSVEV as shown in Figure 3.

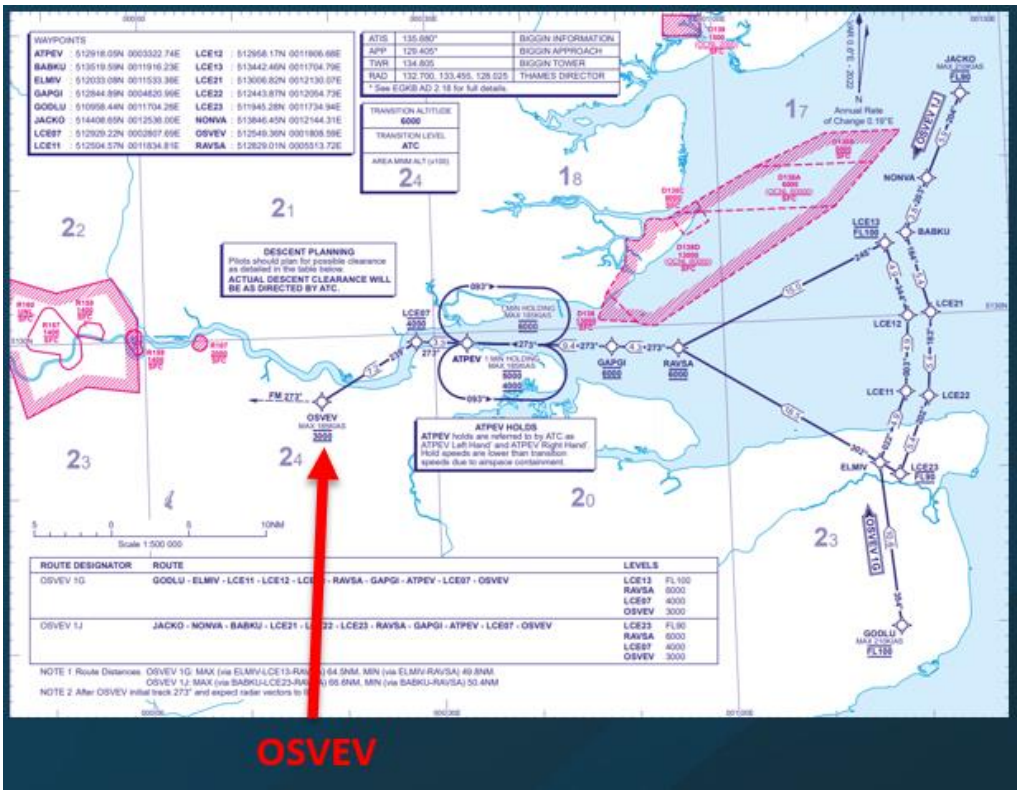


Figure 3 – LBHA – Approach Transition

Arriving aircraft are provided with Radar Vectors from Thames Director Air Traffic Controllers as they approach OSVEV from the East, until they are established on the Instrument Landing System (ILS) to land at LBHA. On the rare occasion that radar vectors are not available, 8 times in 2021 and 2 times in 2022, aircraft will need to use ground-based navigation aids to make the Approach onto the ILS. These ground-based navigational aids are due to be removed, hence the need for this new procedure.

3.4 LBHA – Arrival Swathes

Biggin Hill Airport has recently acquired the ability to show actual Instrument Approach Procedure arrivals over a period of time, through an Automatic Noise Operations Management System (ANOMS) which can provide a visual representation of aircraft tracks, including those receiving radar vectors from Thames Director. This has enabled us to provide a more accurate swathe of current approaches as indicated below, which will be used throughout consultation.

This swathe in Figure 4 below (light blue) shows the tracks of arriving aircraft which operate at 3,000 ft amsl or below. There will be no change to flights operating above this level, so they have not been shown.

This swathe contains the tracks of all aircraft receiving radar vectoring from ATC during 2021 and 2022, when making an approach to land at LBHA.

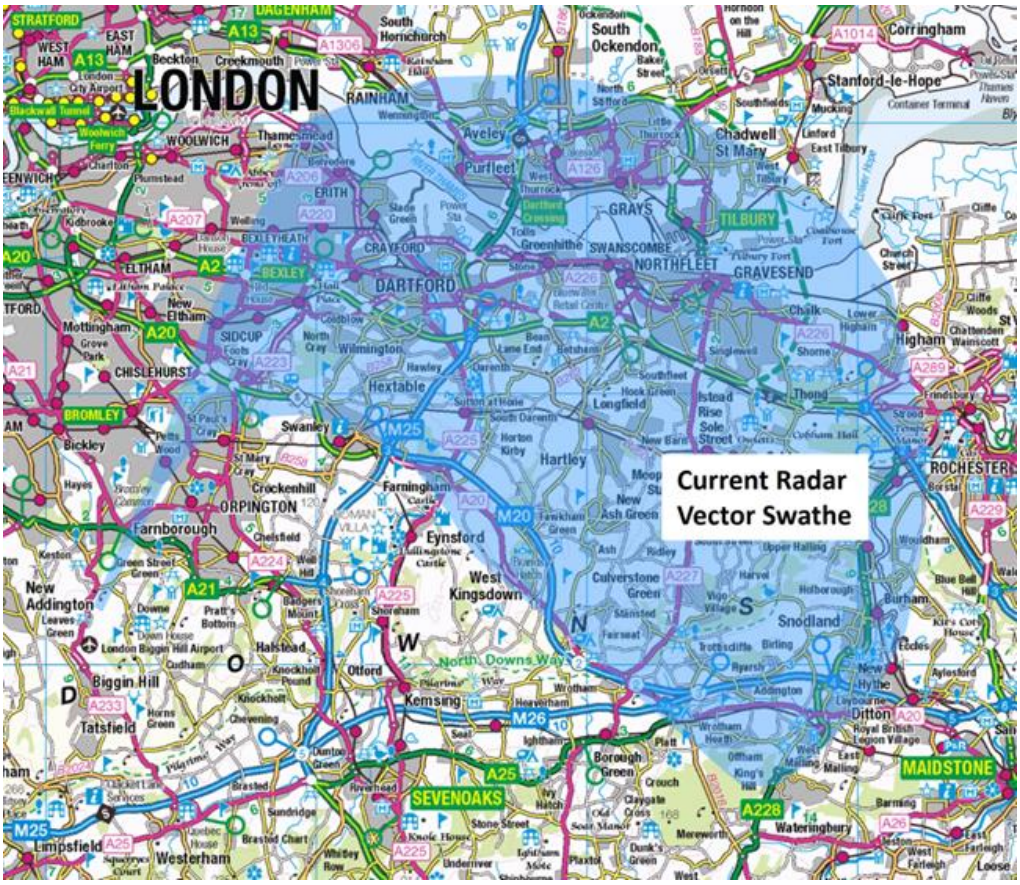


Figure 4 – Runway 21 Arrivals Swathe

3.5 LBHA – Missed Approach Procedure

When an aircraft approaches an airfield on a published IAP, there will be a point at which a pilot must determine whether or not a safe landing can be achieved. The pilot may not have the airfield in sight due to low cloud or fog, or the aircraft may be poorly positioned when approaching a runway due to uncontrolled events, such as a strong gust of wind, the pilot will execute a Missed Approach Procedure. Alternatively, there may be an instruction passed from ATC to execute a MAP, for safety reasons. This is a standard part of the IAP which will allow the pilot to reposition the aircraft to go around for another approach or divert to another airport where conditions may be more favourable for a landing.

During 2021, there were only 17 occasions when a MAP was executed by aircraft having made an approach to Runway 21, this equates to less than 0.046% of all air traffic at LBHA. In 2022, there were only 10 occasions when a MAP was executed by aircraft having made an approach to Runway 21, this equates to less than 0.022% of all air traffic at LBHA.

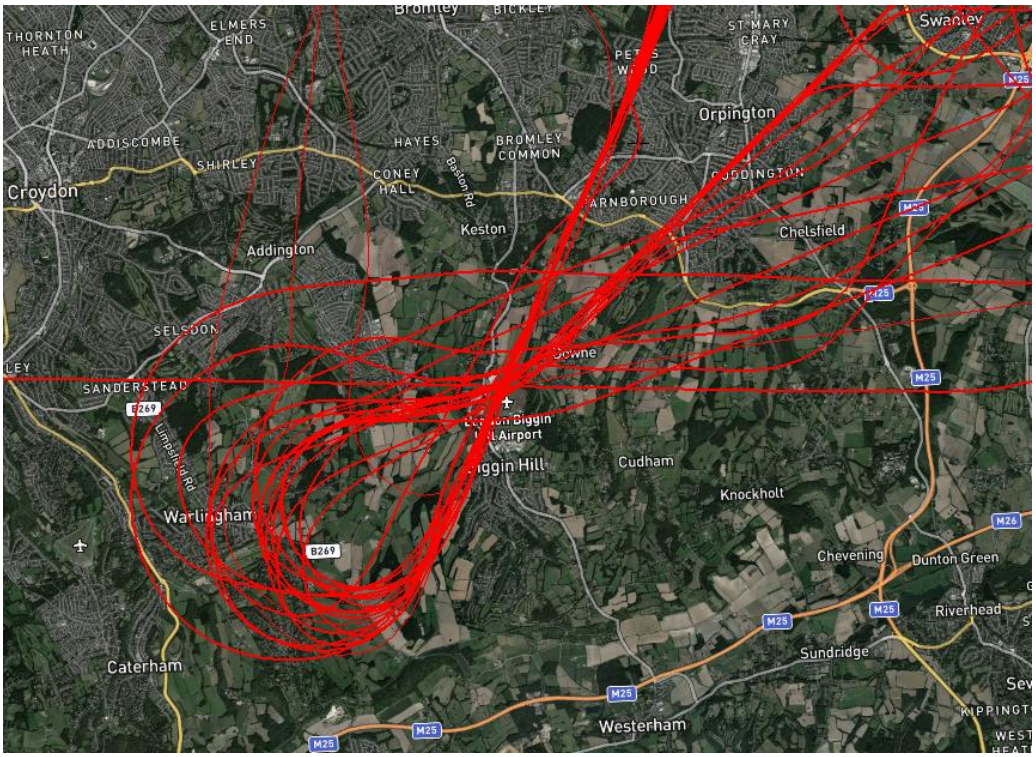


Figure 5 – Missed Approach Tracks

The red lines in Figure 5 show the route followed by aircraft executing the existing Missed Approach Procedure between January 2021 and October 2022 (actual data obtained from ANOMS). As is demonstrated, not all aircraft follow a specified route as they may be provided with Radar Vectors by ATC.

3.6 No Change Option

In accordance with CAP1616 we have to include information on what would happen should this change not proceed. This is known as the Reversion Statement. This situation is explained below.

In the short term the airport would continue to utilise the old navigational aids, whose life has been extended under a contractual arrangement. However, these navigational aids, which are owned by National Air Traffic Services (NATS Ltd), are planned to be removed in the near future as they are lifetime expired and spare parts are no longer available. Once removed, existing arrival and departure procedures would not be available, without the assistance the airways radar controllers. Without the assistance of Radar controllers, there would be no backup procedure should the ILS fail. Equally we would not be aligned with UK or international policy.

4 CAP 1616 – Airspace Change Proposal

4.1 Introduction

As part of the Airspace Change process, the following information shows the work which has been completed to allow us to start the consultation on this Airspace Change Proposal:

- The Proposal
- The Process
- The Statement of Need
- The Timeline
- Stage 1
- Stage 2

4.2 The Proposal

LBHA is proposing to introduce a new satellite based Area Navigation Instrument Approach Procedure, called an RNAV Approach, which will endeavour to mimic the existing ILS Approach procedure. There will be an RNAV Instrument Approach onto the ILS and a full RNAV Approach. Each Instrument Approach Procedure will include a Missed Approach Procedure on the same chart. The new IAP will include an updated MAP to RNAV standards.

4.3 The Process

The process of implementing a change of use of airspace in the UK is done by following the CAA Airspace Change document CAP 1616 – Guidance on the regulatory process for changing Airspace. All information regarding this change is available on the CAA Airspace portal.

Sponsors of Airspace Change are required to follow the stages set out in CAP 1616, which is initiated by the presentation of a Statement of Need to the CAA. The CAA will determine how many of the 7 stages are required to be completed by the sponsor, which will be dependent on the type of ACP concerned.

The CAA, as the UK's independent aviation regulator, will confirm that a Sponsors ACP is fair and proportionate, enabling the Sponsor to complete each agreed gateway and progress through the CAP1616 staged process.

CAP 1616 AVAILABLE HERE:

https://publicapps.caa.co.uk/docs/33/CAA_Airspace%20Change%20Doc_Mar2021.pdf

CAA AIRSPACE PORTAL AVAILABLE HERE:

https://airspacechange.caa.co.uk/

4.4 Statement of Need

"LBHA is proposing to implement an RNAV(GNSS) Instrument Approach Procedure (IAP)1, with LNAV2 and LPV3 Minima to Runway 21. The IAP will be designed for aircraft in Speed Categories A, B, and C and will include an RNAV Missed Approach Procedure. The RNAV(GNSS) IAP will replicate/mimic the existing Runway 21 ILS/DME/VOR procedure. The RNAV(GNSS) Procedure for Runway 21 will not only act as a back-up in the event of an ILS failure, but will also future proof the airfield and provide an alternative to procedures utilising the BIG VOR5, which is due to be removed in the near future."

LBHA submitted this Statement of Need in April 2020, which was followed by an Assessment meeting with the CAA the following month.

NOTES:

1. RNAV (GNSS) IAP – Satellite based navigational Approach.
2. LNAV – Lateral Navigation (A Satellite based Approach)
3. LPV – Localiser Performance with Vertical Guidance (A Satellite based Approach).
4. ILS/VOR/DME procedure – Ground based navigational aid procedure.
5. BIG VOR – Biggin Doppler VOR ground based navigation beacon.

4.5 The Timeline

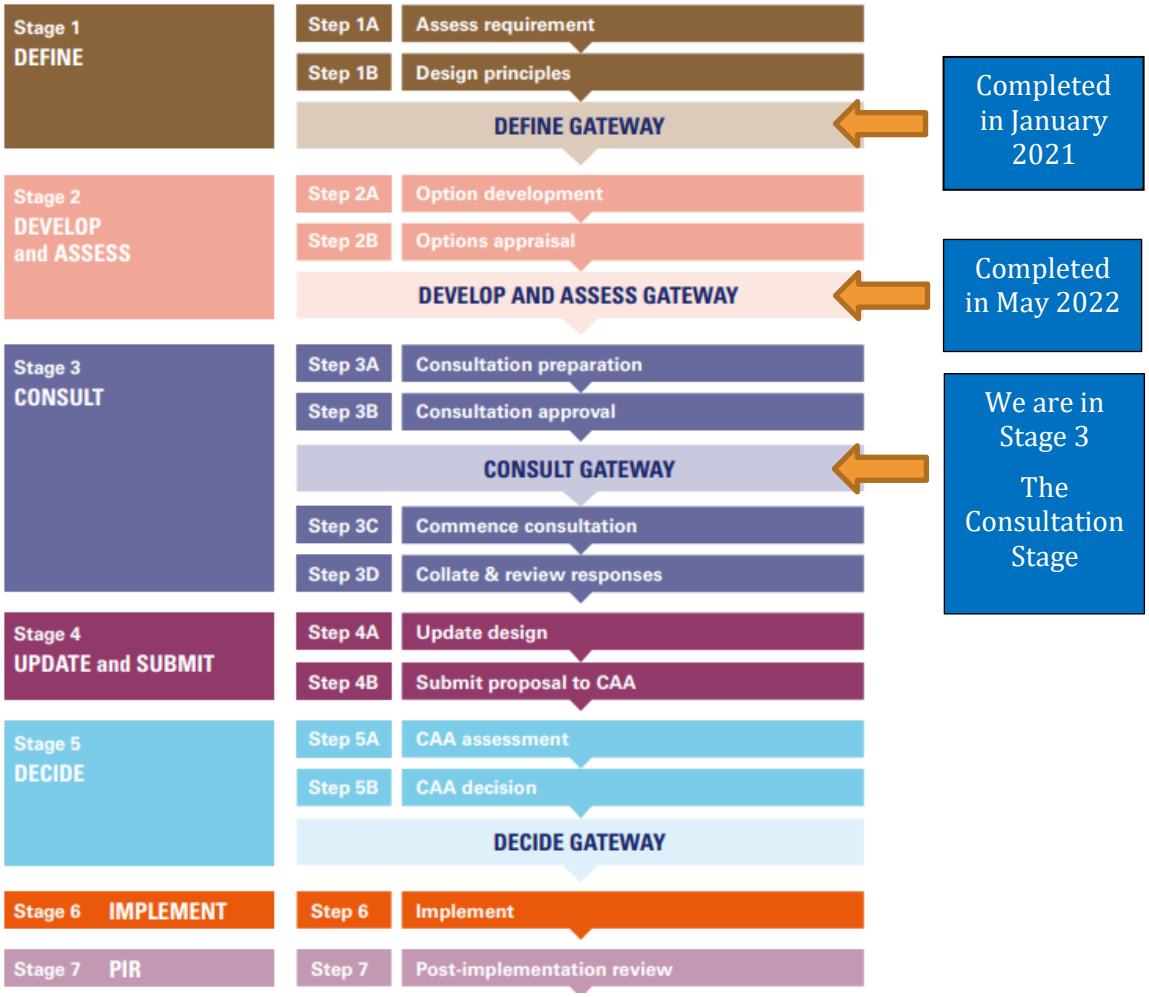


Figure 6 – CAP 1616

CAP 1616 AVAILABLE HERE

4.6 Stage 1 – Design Principles

The following Design Principles were developed through engagement with stakeholders in accordance with CAP 1616.

Priority	Design Principle	Category	
1	SAFETY - New routes must be safe and must not erode current ANSP safety barriers	CORE	Safety

Priority	Design Principle	Category	
2	ENVIRONMENTAL CONCERNS - Arrival routes should, where possible, be designed to minimise the impact of noise below 7,000' and should avoid the overflight of populations not previously overflown	CORE	Environmental
3	COMPLIANCE - Routes should, where possible, be designed to be PANS Ops compliant	CORE	Technical
4	NAVIGATION STANDARDS - New routes must be designed to use PBN	CORE	Operational
5	EFFICIENT ROUTES - Arrival routes should, where possible, be designed to minimise emissions and optimise operational efficiencies	CORE	Environmental
6	REPLICATION - Procedure should, where possible mimic the existing procedure and/or the existing ILS positioning by ATC vectors	CORE	Environmental

Table 1 – Design Principles

CAP 1616 AVAILABLE HERE

4.7 Stage 2 – Develop and Assess

Options were developed with regard for the Design Principles and subsequently assessed against them. This allowed for the rejection of some options which did not meet some of the Design Principles. It is not always possible for all options to meet all Design Principles, but this process allows those options that do this better than others to be retained.

Stakeholder engagement and feedback was utilised and analysed within the development of options. In accordance with the process, we engaged with stakeholders from Local Councils, the Aviation Industry and the Airport Consultative Committee.

An initial options appraisal of the remaining route options was conducted and through this mechanism the shortlist of options within this consultation was established.

All of the information from Stage 1 and 2 is available on the CAA Airspace Portal:

CAA AIRSPACE PORTAL AVAILABLE HERE

5 Post Engagement Option

5.1 Post Engagement

During re-engagement with London City Airport (LCY), concern was raised that Options 2A and 2AD could impact LCY operations. This concern was regarding to the location of the Intermediate Fix (IF – Figure 8), which was located slightly north of the existing IF (IF – Figure 7). The new location, which was not identified during the Stage 2 Engagement, would require more sequencing with London City Arrivals and had the potential to create delays to LCY air traffic. LCY were advised that this approach would only be used on rare occasions and, more likely when LCY was closed.

LCY is dependent on Thames Director for all arrivals as the Air Traffic Controllers are Tower-only qualified, and have more restrictive operational hours than LBHA. LCY air traffic is currently sequenced with Biggin Hill air traffic by Thames Director to prevent conflictions. On the rare occasion that an aircraft flies the existing VOR/DME Approach, an approval will be required from Thames Director, as the procedure will enter the south eastern corner of the LCY CTA.

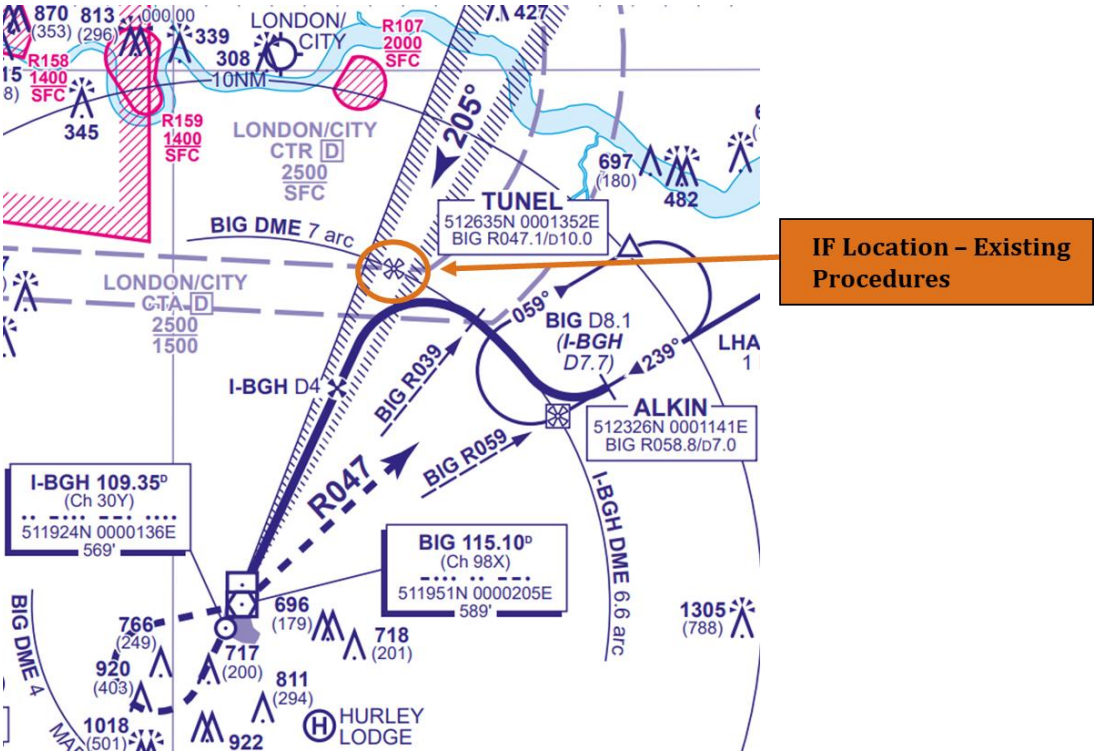


Figure 7 – ILS/VOR/DME Procedure

Although Thames Director would continue to provide approval to fly the new procedure and would not erode ANSP safety barriers, the concern raised by LCY was that LBHA aircraft flying the new procedure would encroach the LCY CTR and therefore be closer to LCY traffic than previously, resulting in either flight delays to LCY traffic or radar vectoring to maintain radar separation range, increasing

controller workload. Although LBHA believe that Options 2A and 2AD would not have an impact on LCY operations, LCY's concerns were noted, which led to the generation of a third option, Option PE. Thames Director advised that they would not be changing their procedures following the introduction of an RNAV Approach at LBHA. Radar vectoring remains the most efficient method of sequencing aircraft, so controller workload would not be impacted.

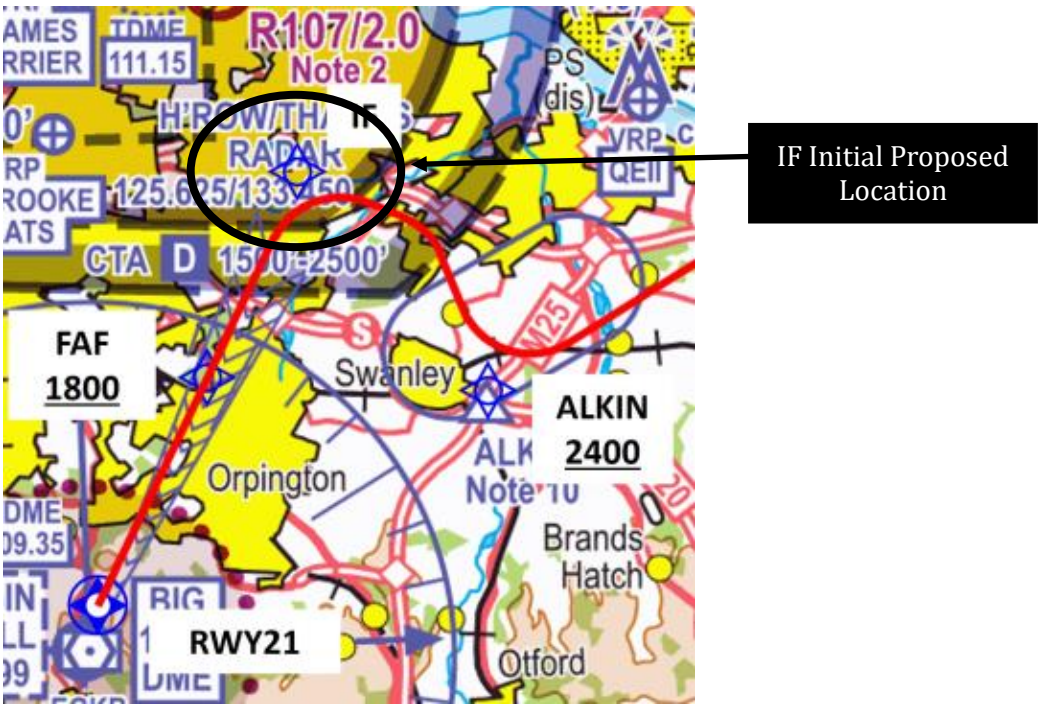


Figure 8 – Proposed Location

Biggin Hill Airport investigated the possible option of moving the new IF to existing location of the IF for the ILS/VOR/DME procedure, which is on the edge of the LCY CTR (Figure 7). Having moved the IF closer to ALKIN, it was found that the PANS-OPS requirements would not permit a turn onto this new location of the IF, whilst maintaining the proposed route from OSVEV and ALKIN.

A new option was designed (Figure 9) where the location of the IF was clear of the LCY CTR. This option would also start at OSVEV, but would follow a different route to the existing ILS/VOR/DME procedure and would include an offset approach to the Final Approach Fix (FAF) from the IF. This new procedure would be PANS-OPS compliant. This has shown to be acceptable to LCY, and has been introduced as an additional Option – Option PE. There are no additional hazards identified with this option. All approaches, current and proposed, transit Class G and Controlled Airspace (LCY CTA), so this option does not introduce any hazards not previously identified.

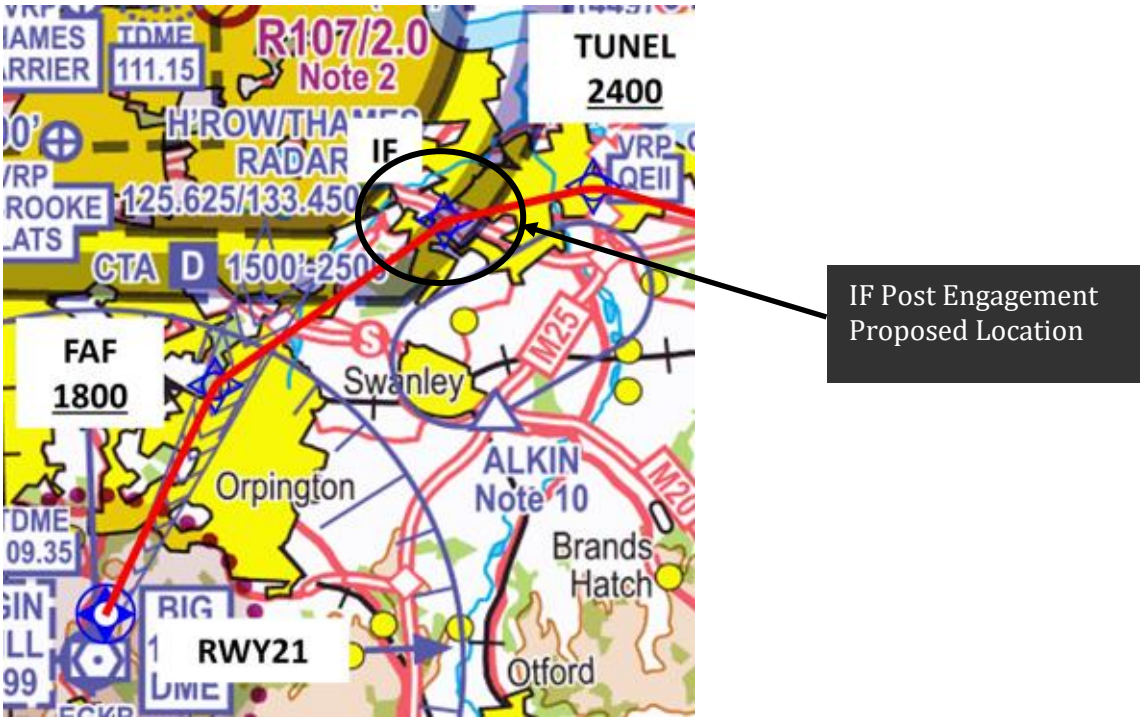


Figure 9 – Post Engagement IF Location

The Option PE falls within the current radar vector swathe, as shown in Figure 10 below.

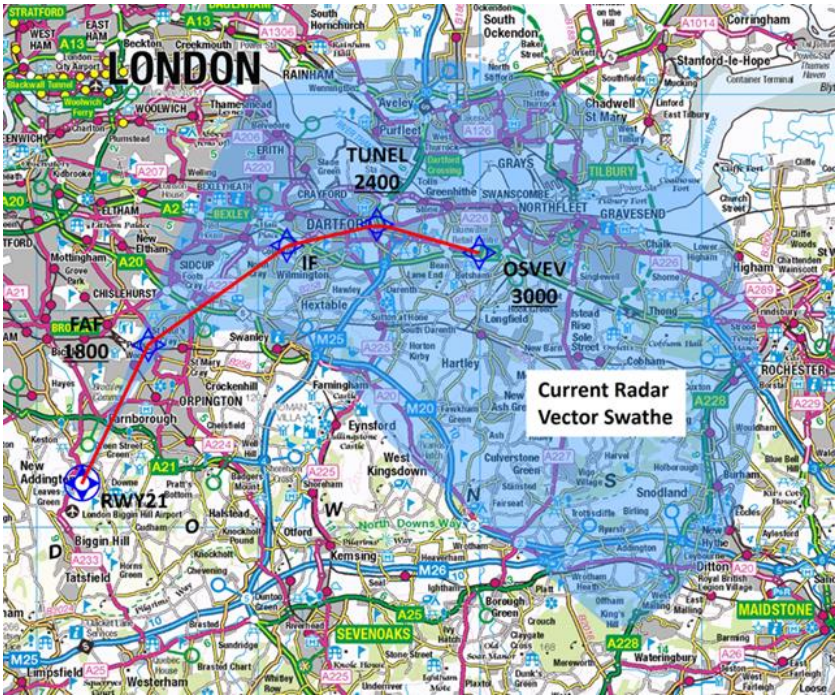


Figure 10 – New IF located within the swathe – Option PE

Although this option does not replicate the existing ILS/VOR/DME approach, it does replicate the likely ground track for aircraft receiving radar vectors from

OSVEV to intercept the ILS procedure. Figure 11 shows Option PE with a more detailed representation of the routes followed by IFR aircraft inbound to Runway 21 during June 2023, when Radar Vectors were provided by Thames Director as depicted by the Current Radar Vector Swathe in Figure 10. In the event that Radar Vectors are not available, there would be a concentration of tracks along the route shown for Option PE. Therefore, Option PE is the optimum design to replicate existing arrival tracks when Radar is available. However, it should be clearly noted that Option PE will only be flown when Radar Vectors are NOT available. There were only 8 occasions during 2021 and 2 occasions during 2022 when Radar Vectoring was not available from Thames Director, requiring aircraft to fly the full non-Radar procedure.

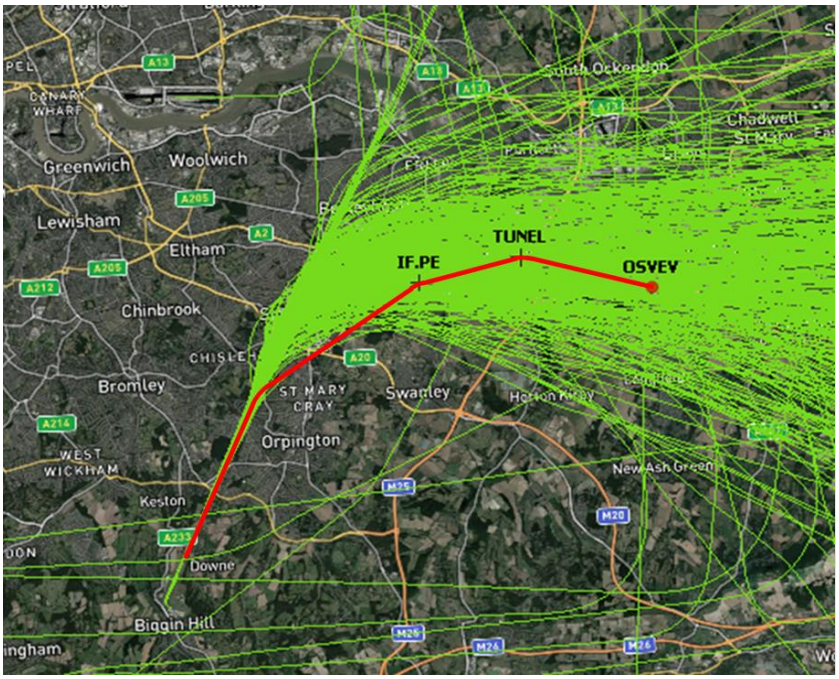


Figure 11 – IFR Arrivals June 2023 – Option PE

The proposed track will not fly over any areas not already overflown or already proposed during the Stage 2 engagement. Therefore, it is not considered necessary to conduct further engagement to introduce this option. This Option PE will be included as an Arrival Option for this consultation.

Although this option does not replicate the ground track of the procedure it is designed to replace, this procedure will not only act as a back-up in the event of an ILS failure, but will also future proof the airfield and provide an alternative to procedures utilising the BIG VOR which is due to be removed in the near future. This is in line with the Statement of Need for this ACP. Table 2 below shows how this option aligns with the Design Principles.

Design Principle 1: SAFETY - New routes must be safe and must not erode current ANSP safety barriers.	MET
Summary of Qualitative Assessment: The procedure design will meet acceptable levels of flight safety.	

Design Principle 2: ENVIRONMENTAL CONCERNS - Arrival routes should, where possible, be designed to minimise the impact of noise below 7,000' and should avoid the overflight of populations not previously overflown.	MET
Summary of Qualitative Assessment: This option falls within the current radar vector swathe and replicates the likely ground track for aircraft receiving radar vectors from OSVEV to intercept the ILS procedure. The proposed track will not fly over any areas not already overflown.	
Design Principle 3: COMPLIANCE - Routes should, where possible, be designed to be PANS Ops compliant.	MET
Summary of Qualitative Assessment: This option is compliant.	
Design Principle 4: NAVIGATION STANDARDS - New routes must be designed to use PBN.	MET
Summary of Qualitative Assessment: This option is designed using PBN.	
Design Principle 5: EFFICIENT ROUTES - Arrival routes should, where possible, be designed to minimise emissions and optimise operational efficiencies.	MET
Summary of Qualitative Assessment: This option includes a more direct routing between OSVEV and the approach procedure prior to establishing at the FAF.	
Design Principle 6: REPLICATION - Procedure should, where possible mimic the existing procedure and/or the existing ILS positioning by ATC vectors.	MET
Summary of Qualitative Assessment: This option is likely to mimic the ground track for aircraft receiving radar vectors from OSVEV to intercept the ILS procedure.	

Table 2 – Option PE Design Principles Evaluation

6 Stage 3 – Consult

6.1 What Are We Consulting On?

This consultation is about introducing:

- An Instrument Approach Procedure which will be infrequently used, a total of 8 times during 2021 and 2 times during 2022, to replace an existing similar procedure (which will be withdrawn) for Runway 21 at LBHA.

- A Missed Approach Procedure (replacing the current version), which is infrequently used, a total of 17 times during 2021 and 10 times during 2022.

Due to the very small numbers of aircraft using these procedures we do not anticipate any change to any current environmental impacts.

6.2 Consultation Options

The route options in this consultation are known as the short list and are the output from, and Post Engagement of, Stage 2 of CAP 1616. There are 3 arrival options and 1 missed approach.

During development each option was logically identified with numbers and letters to enable transparency and clarity. The Post Engagement route option is labelled PE for clarity. A full list of the options considered is available in the Stage 2 Full Options Appraisal documentation located on the CAA Airspace Portal.

6.3 Option Costs and Benefits

The Options being consulted on DO NOT:

- incur training or equipment costs to the operators as the technology is widely in use around the world.
- adversely impact the operators fuel requirement as they closely follow the current procedures.
- adversely impact General Aviation as they closely follow the current procedures.
- adversely impact local communities as they closely follow the current procedures.

All of the options allow for continued LBHA operations in line with current government policy and have the opportunity to aid air traffic management due to the movement to modernised operations.

Due to the similarity of the arrival options the costs and benefits are only differentiated by the benefit to the pilot, air traffic control and the airport of the direct link to OSVEV.

The following Route Options are the shortlist from Stage 2, and Post Engagement, and will be taken forward to the Consultation.

6.4 Route Option 2A – Arrival Option

A direct track from ALKIN (the existing holding point) onto the Final Approach Fix for the ILS or a full satellite based approach.

Whilst this option provides a connection to the existing hold, it does not link to the Transition for arriving aircraft which ends at OSVEV.

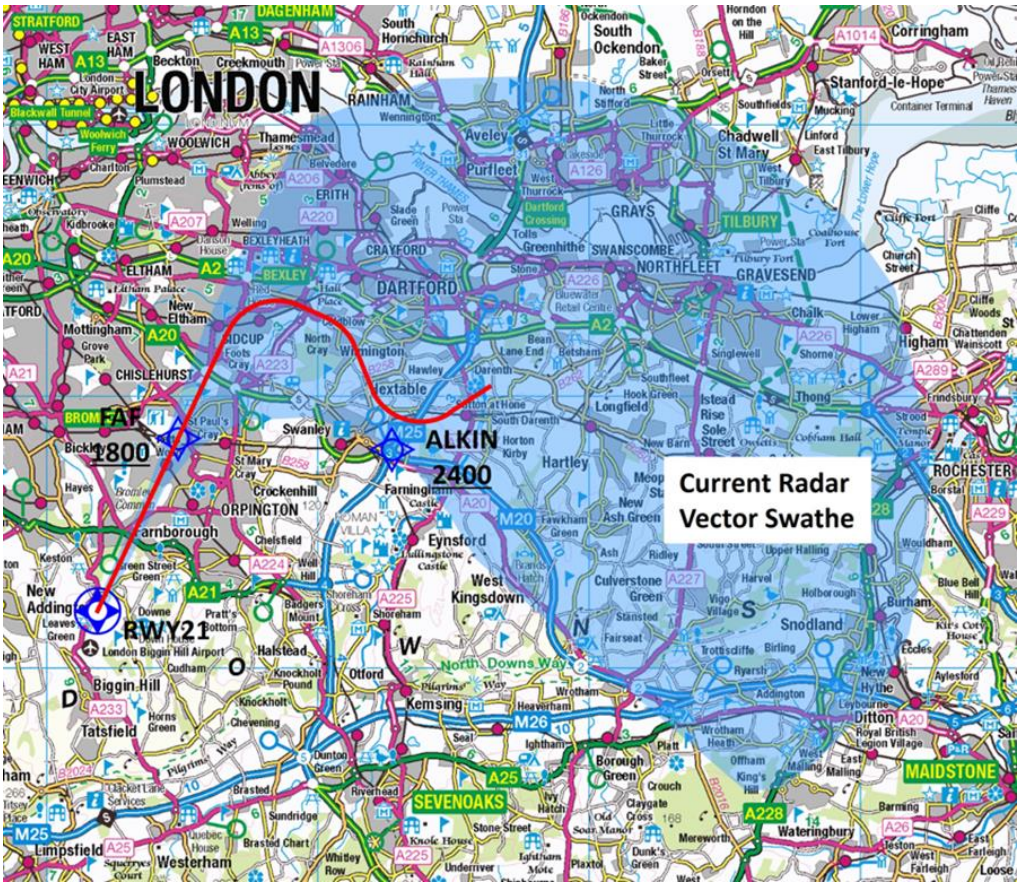


Figure 12 – Option 2A

This option requires a pilot to self-navigate to ALKIN to start the procedure, it does not link to the en-route network for arriving aircraft.

During our re-engagement with LCY, LCY raised a concern that the location of the IF inside the LCY CTR meant that this option could have an impact on their operations. LCY were advised that this approach would only be used on rare occasions and, more likely when LCY was closed. Biggin Hill Airport believe that this option would not have an impact on LCY operations, and that the Design Principle Evaluation of this option, conducted at Stage 2 remains valid, with no erosion of ANSP safety barriers; Thames Director would continue to sequence traffic from both airports safely. If the procedure was used when a radar service was not available, LCY would not be able to operate so there would be no conflictions with LCY traffic. Therefore, Option 2A is taken forward for consideration as a viable option.

Earlier estimates projected the annual use of this procedure to be approximately 24-28 times per year (approximately twice a month). However, since then, the Radar Service provider (Thames Director) has aligned their provision of service hours with the LBHA operating hours. There were 8 arrivals during 2021 and 2 times during 2022 when radar was not available. Therefore, this option is only expected to be flown approximately 8 times a year. Although the exact usage is difficult to predict, this figure is not expected to change significantly in future years as a Radar Service will be available during the LBHA Operating hours.

The red line indicates the expected route of Option 2A. ALKIN is established as flyby waypoint, as indicated by 

which is why the route does not pass exactly pass over the ALKIN point.

6.5 Route Option 2AD – Arrival Option

A direct track from OSVEV, via ALKIN, onto the Final Approach Fix for the ILS or a full satellite based Approach.

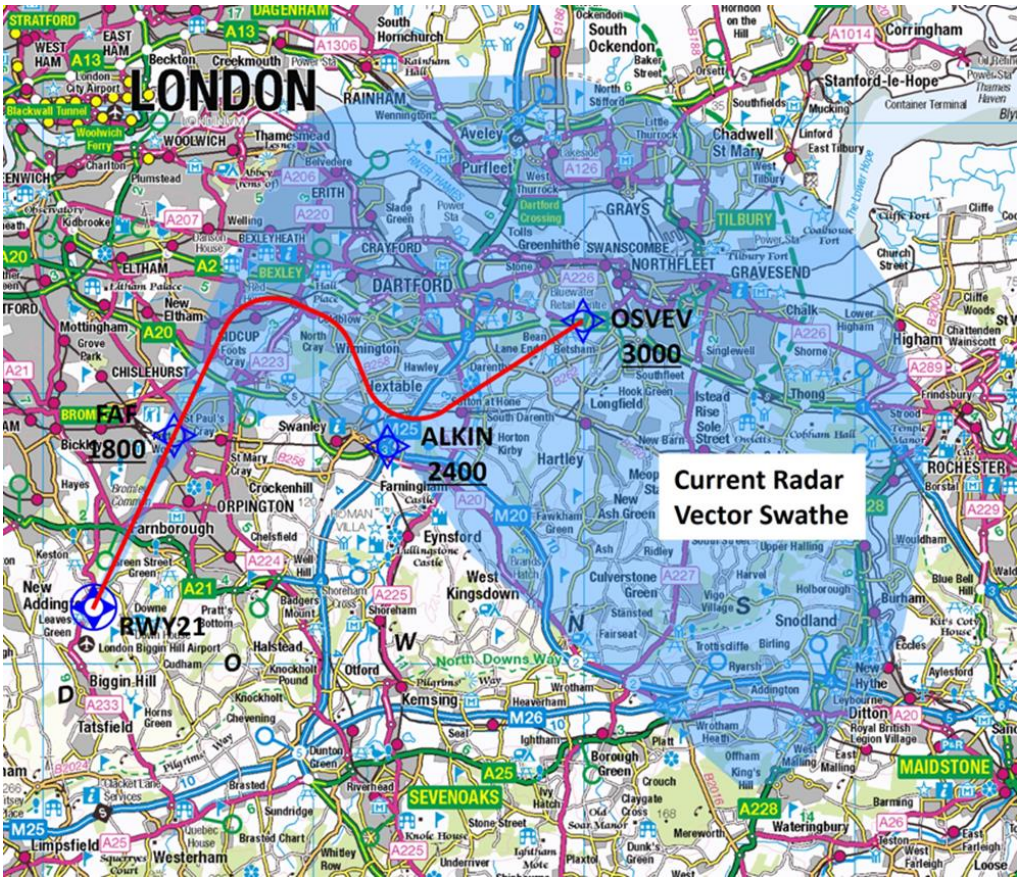


Figure 13 – Option 2AD

This design is exactly the same as the previous option with an additional section between ALKIN and OSVEV that results in connectivity with the en-route network.

During our re-engagement with LCY, LCY raised a concern that the location of the IF inside the LCY CTR meant that this option could have an impact on their operations. LCY were advised that this approach would only be used on rare

occasions and, more likely when LCY was closed. Biggin Hill Airport believe that this option would not have an impact on LCY operations, and that the Design Principle Evaluation of this option, conducted at Stage 2 remains valid, with no erosion of ANSP safety barriers; Thames Director would continue to sequence traffic from both airports safely. If the procedure was used when a radar service was not available, LCY would not be able to operate so there would be no conflictions with LCY traffic. Therefore, Option 2AD is taken forward for consideration as a viable option.

The red line indicates the expected route of Option 2AD.

OSVEV and ALKIN are flyby waypoints, as indicated by 

which is why the red line may not pass directly over the waypoint.

There were 8 arrivals during 2021 and 2 times during 2022 when radar was not available. Therefore, this option is only expected to be flown approximately 8 times a year. This figure is not expected to change significantly in future years, as explained above.

This option provides a link to the existing at OSVEV, which will not be changing.

6.6 Route Option PE – Arrival Option

The Intermediate Fix is located outside of the London City CTR.

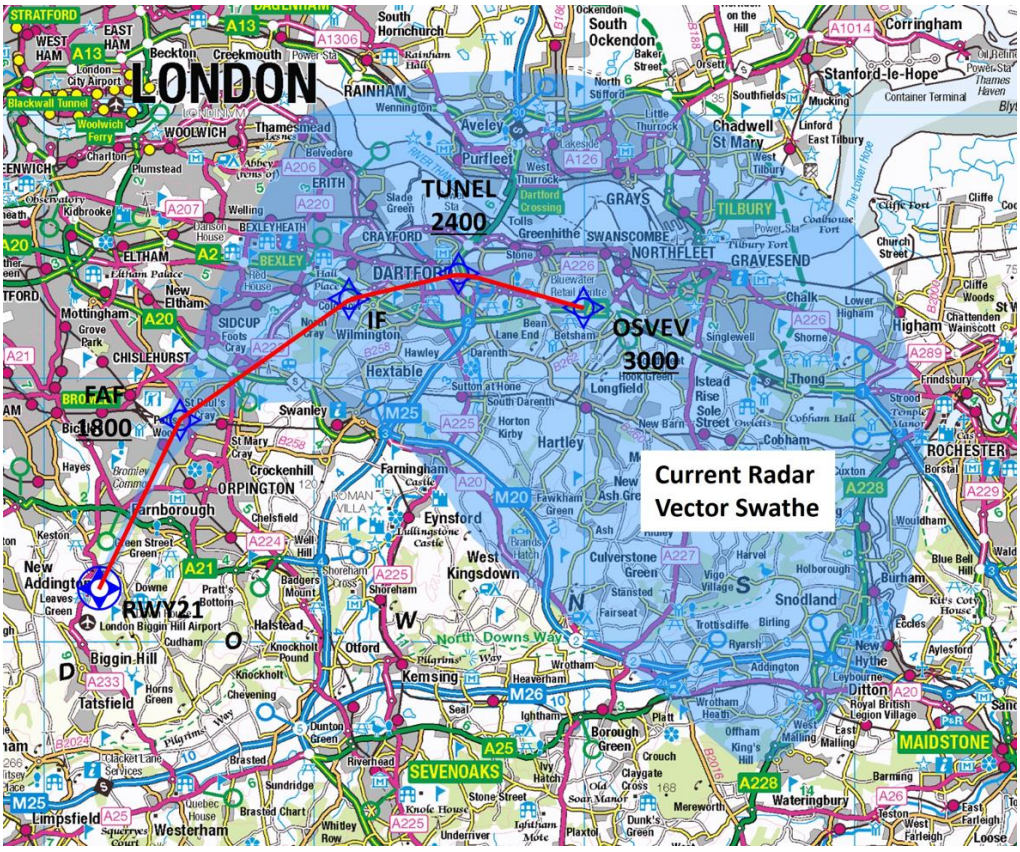


Figure 14 – Option PE

This design, like 2AD, links to the Approach Transition at OSVEV, providing connectivity to the network.

The red line indicates the expected route of Option PE.

The location of the IF is outside the LCY CTR which would have less impact on LCY operations. This is our preferred option as it deconflicts with London City traffic and provides a link to the existing Approach Transition at OSVEV, which is not changing.

There were 8 arrivals during 2021 and 2 times during 2022 when radar was not available. Therefore, this option is only expected to be flown approximately 8 times a year. This figure is not expected to change significantly in future years, as explained above.

6.7 Route Option 9 – Missed Approach Option

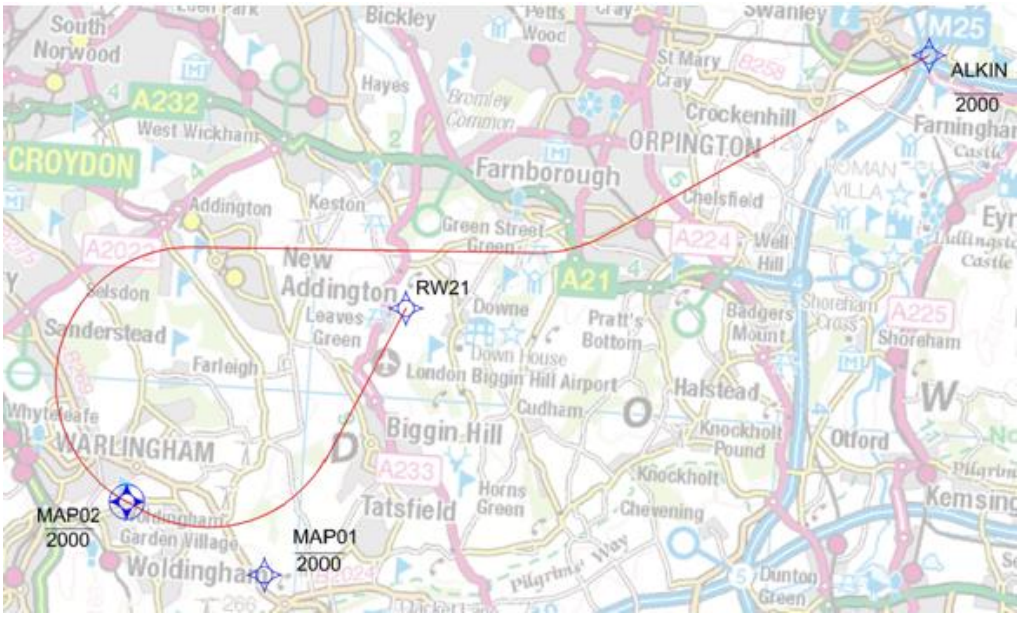


Figure 15 – Missed Approach

This is the only Missed Approach Procedure to be taken forward as the other options were discontinued earlier in the CAP 1616 process. Details can be found in the Stage 2 Initial Options Appraisal located on the CAA Airspace Portal.

Only 17 aircraft during 2021 and 10 aircraft during 2022 executed a Missed Approach Procedure, and it is expected that this figure be similar for future years.

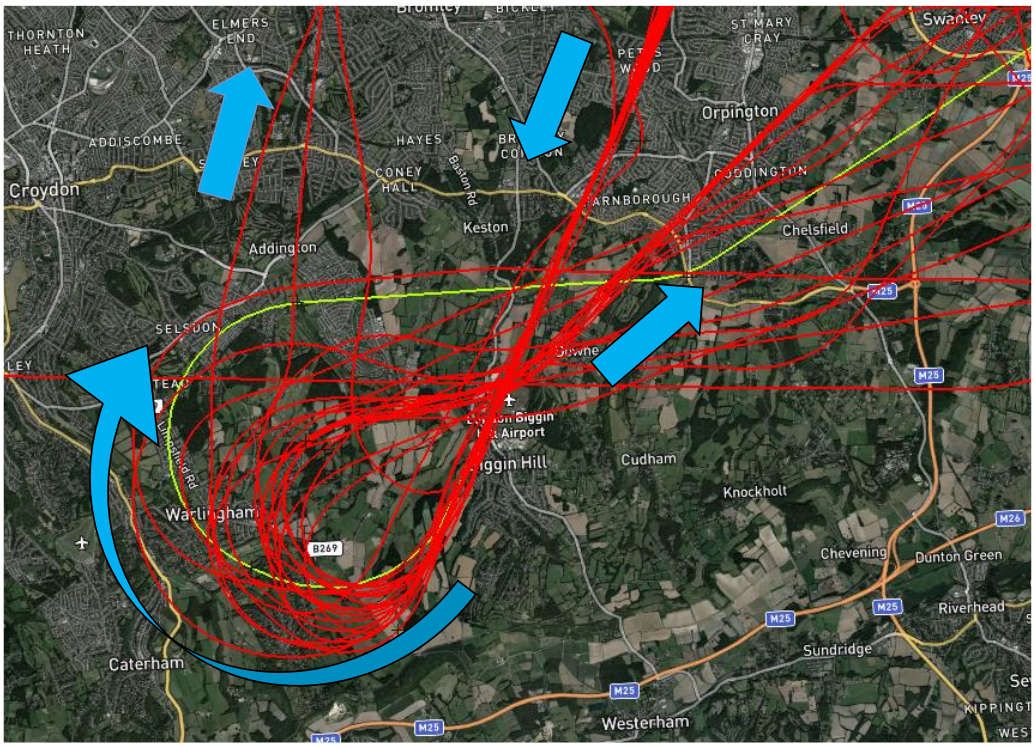


Figure 16 – RNAV Missed Approach

The proposed route of the MAP is shown as a green line.

The BLUE arrows indicate direction of flight.

In red are 27 actual Missed Approach tracks from January 2021 to October 2022 which show natural variation due to the Aircraft type, the aircraft navigation system and application of radar vectors by ATC.

This group of tracks are flying the procedure, rather than being in receipt of Radar Vectors.

The application of radar vectors is expected to continue with the MAP. Therefore, not all aircraft will follow the green MAP line.

6.8 Process Summary

In accordance with CAP1616, the CAA normally requires the sponsor to conduct a consultation as part of the ACP Approval.

All possible options for Arrivals and Missed Approach Procedures were investigated and evaluated against the agreed design principles at Stage 2, which determined which options would be taken forward for the consultation.

After the consultation period has ended, the feedback of everyone who responds to the consultation will be collated and analysed by LBHA and help to shape the final proposal that will be submitted to the CAA.

6.9 Who is Involved in This Consultation?

The following groups will be involved in this consultation:

Aviation Stakeholders:

- LBHA Based Operators
- Local General Aviation
- National Organisations
- Ministry of Defence
- Air Navigation Service Providers
- Adjacent Airports
- LBHA Committees

Non-Aviation Stakeholders:

- Local Communities
- Regional and Local Authorities
- Town and Parish Councils
- Environmental Organisations

A full list of all identified stakeholders is provided in Appendix A3 of the Consultation Strategy, which can be found on the airspace change portal alongside this document. However, this consultation is open to everyone and responses will be welcomed from any geographical location.

7 Consultation Options

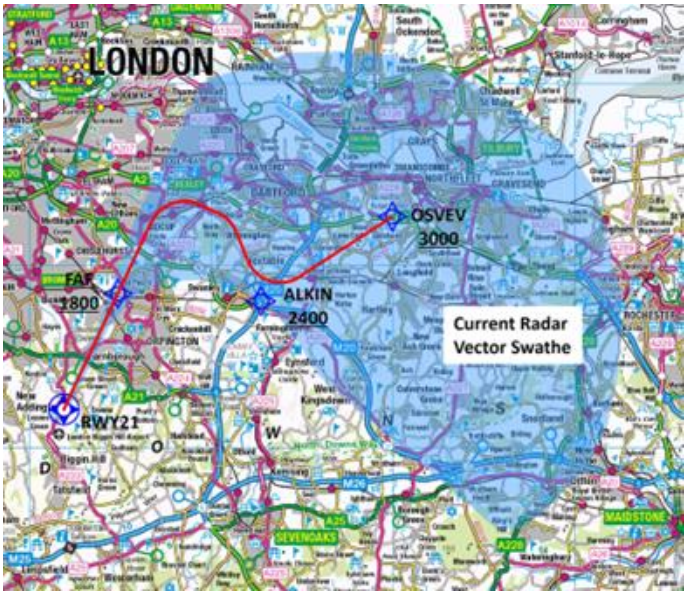
7.1 Consultation Options

None of these Arrival or Missed Approaches fly over new areas.

Route Option 2A

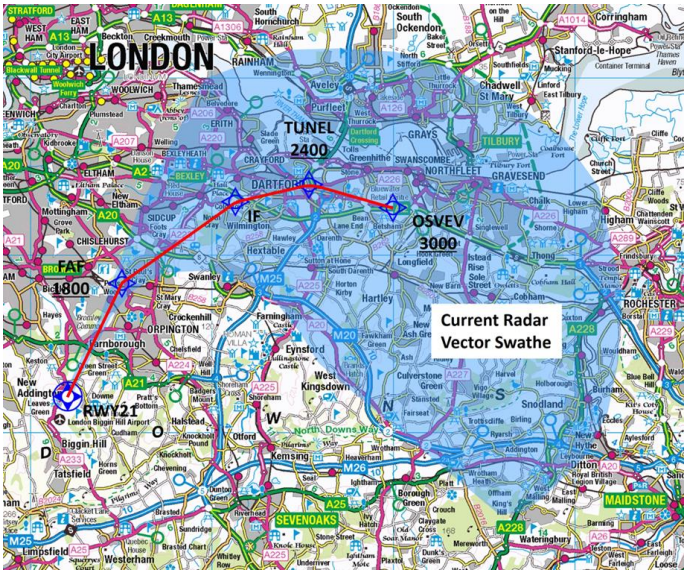
No satellite navigation available before ALKIN – pilot self-navigates to ALKIN

Route Option 2AD



Satellite navigation available from Approach Transition – aircraft navigates into procedure from transition at OSVEV.

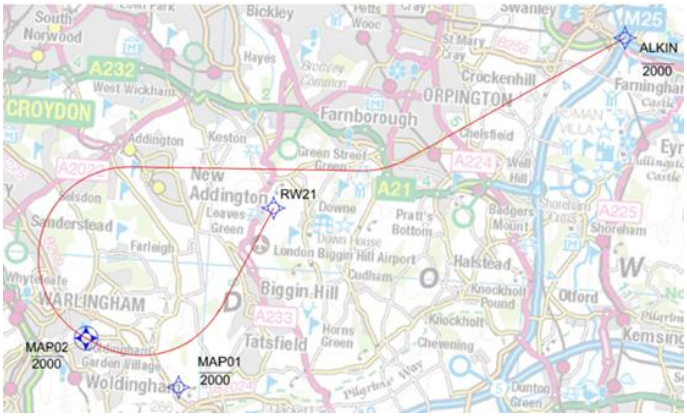
Route Option PE



Satellite navigation available from Approach Transition – aircraft navigates into procedure from transition at OSVEV.

LBHA preferred option

Route Option 9



Missed Approach Procedure

7.2 Consultation Options

The route options in this consultation are known as the short list and are the output from, and Post Engagement of, Stage 2 of CAP 1616. There are 3 arrival options and 1 missed approach. The published IAP must incorporate a Missed Approach Procedure (MAP) in the event that a pilot does not consider a landing is possible. This is a standard part of the IAP which will allow the pilot to reposition the aircraft to go around for another approach or divert to another airport where conditions may be more favourable for a landing.

The shortlist in this consultation consequently consists of 3 options that are known as:

1. Option 2A + Option 9

2. Option 2AD + Option 9

Or

3. Option PE + Option 9

7.3 Consultation Questions

1. Do you support the proposed changes?

SUPPORT	I support the proposed changes
NEUTRAL	I neither support nor object
OBJECT	I object to the proposed changes
NO COMMENT	I have no comment to make on the proposed changes

2. Consultation Options – Please indicate which is your preferred option:

   Option 2A + Option 9

   Option 2AD + Option 9

   Option PE + Option 9

   Do not support any option

   No preference

3. Do you have any further feedback on this airspace change proposal?

7.4 Your Response

We are unable to accept verbal or email responses. Your responses should be submitted via the Citizen Space located on the CAA Airspace Portal, link available below. Responses are requested by 9th October 2023.

There will be a free text space available if you wish to add any comments. However, should you prefer, postal responses can be sent to;

21 RNAV ACP
London Biggin Hill Airport
Biggin Hill
Bromley
TH16 3BH

Links:

CITIZEN SPACE

https://consultations.airspacechange.co.uk/

or QR Code

CAP 1616 AVAILABLE HERE:

https://publicapps.caa.co.uk/docs/33/CAA_Airspace%20Change%20Doc_Mar2021.pdf

CAA AIRSPACE PORTAL AVAILABLE HERE:

https://airspacechange.caa.co.uk/

7.5 Consultation Events

If you would like to talk to us about this proposed change we are holding some consultation events as follows:

Virtual Sessions for our stakeholders that have previously engaged with us about this change:

1. Wednesday 20th September 2023, 1000 - 1200
2. Wednesday 27th September 2023, 1000 - 1200

If you would like to attend either of these events, please advise via email to 21RNAVACP@bigginhillairport.com, so that we can send you a link to the session.

We will be holding a Public Session for anybody to take part in at The Hub, Building 707, Churchill Way, Biggin Hill, TN16 3BN, on the following dates, where we will be happy to answer any questions:

1. Thursday 21st September 2023, 1200 - 1400
2. Thursday 21st September 2023, 1600 - 1800
3. Thursday 21st September 2023, 1900 - 2100
4. Tuesday 3rd October 2023, 1200 - 1400
5. Tuesday 3rd October 2023, 1600 – 1800
6. Tuesday 3rd October 2023, 1900 - 2100

Complimentary parking is available. Details of The Hub's location can be found under the Services tab on the London Biggin Hill Airport website, at the following address:

The Hub - Skills & Development - London Biggin Hill Airport

7.6 Post Consultation

After the consultation, a feedback document will be compiled in accordance with CAP 1616 Appendix C, summarising the themes and our response to any issues raised. It will illustrate how we have heard and understood the responses received, how those responses might impact the proposal and, where it has not been possible to accommodate them in whole or part.

All feedback will be presented transparently, detailing why responses have been categorised and how those responses will be acted upon. The feedback document will be available on the CAA Airspace Change Portal in due course.