LONDON
BIGGIN HILL
AIRPORT

# 21 RNAV (GNSS)
# AIRSPACE CHANGE PROPOSAL (ACP)

ACP-2019-86

AVIATION STAKEHOLDERS FOCUS GROUP

15th April 2021

# AIRSPACE CHANGE PROPOSAL

LONDON BIGGIN HILL AIRPORT

## NEW RUNWAY 21 APPROACH PROCEDURE

HOUSEKEEPING

- Please turn off your microphones during the presentation.
- If you have a question, please use the meeting chat and we will go through these at the end of the meeting.
- This meeting will be recorded and by continuing to participate your agreement is inferred.
- Your participation assumes that you are familiar with the Stage 1 Report and Comprehensive Options List delivered with the meeting invite.

# AIRSPACE CHANGE PROPOSAL

LONDON BIGGIN HILL AIRPORT

## NEW RUNWAY 21 APPROACH PROCEDURE

This Airspace Change Proposal (ACP) is only about replicating an existing procedure, as best we can, so we expect the impact to be minimal.

# INTRODUCTION

- LBHA wishes to introduce a satellite based approach to Runway 21, which will change the way airspace is utilised.

- The Aviation Regulator, the Civil Aviation Authority (CAA), requires that the sponsor of any Airspace Changes actively engages with their stakeholders, in accordance with formal guidance detailed in Civil Aviation Publication (CAP) 1616.

- We started this ACP in May 2020 with an Assessment Meeting with the CAA, expecting completion by the end of 2022, following a full consultation during summer 2021.

- Full details of the CAP1616 process can be found on the CAA Website, with specific details on this ACP on the CAA Airspace Portal at https://airspacechange.caa.co.uk

# WHY ?

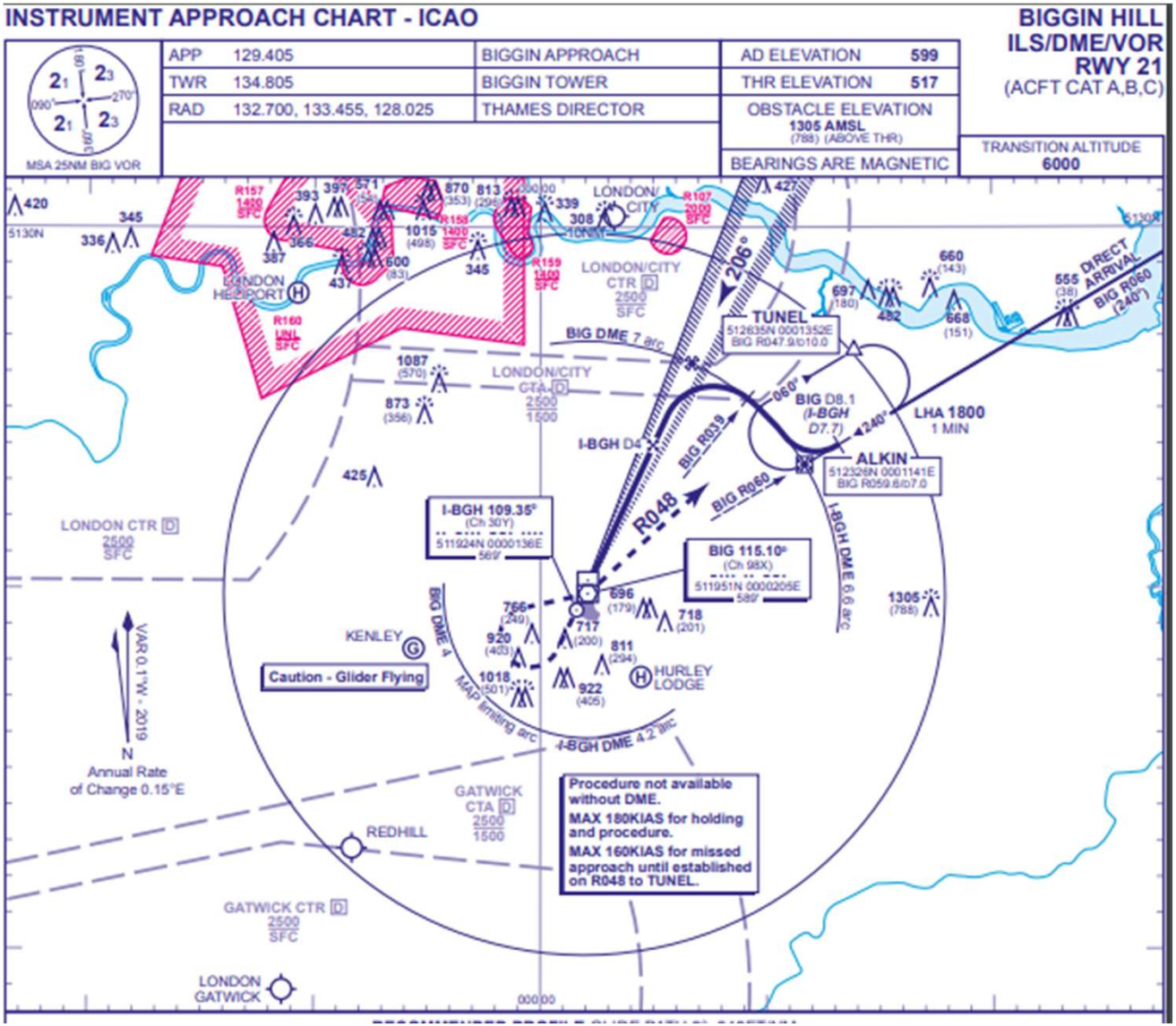
When Pilots are unable to make a visual Approach, during inclement weather, aircraft will make an Instrument based Approach to the airfield using the ground based Instrument Landing System or ILS to runway 21.

London Biggin Hill Airport is proposing to introduce a new satellite based Area Navigation Instrument Approach Procedure, called an RNAV Approach for 2 main reasons;

1. The RNAV Approach will provide an alternative Instrument based Approach, should there be a failure of the ground based ILS.

2. Modern Aircraft navigate the world Airways using satellite navigation. The RNAV Approach will provide a compatible final approach solution which can be integrated into UK Airspace, fully aligning with the CAA Airspace Modernisation Strategy (See CAA Website).

# EXISTING
# RUNWAY 21 – ILS APPROACH



# Points of Note….

This Airspace Change is about the introduction of an Instrument Approach to overlay an existing Instrument Approach Procedure for Runway 21, it is **NOT** about;

- The establishment of controlled airspace
- An increase in aircraft types, numbers, emissions or noise
- Increased Operating Hours
- Airport expansion

Therefore, we do not consider that there will be any adverse environmental impacts with the introduction of this procedure, but some improvements could be gained.

# Airspace Change Process
# CAP 1616 - Stage 1 - COMPLETE

## Define

### OCT 2020

Stakeholders, including all members of the Airport Consultative Committee, were provided with a set of Draft Design Principles and requested to rank them and provide comment / feedback.

### NOV 2020

A total of 18 responses were received from the 176 stakeholders who were invited to respond through the engagement process. All feedback was analysed to produce a final set of Design principles, which will be used as the framework against which Design Options are developed.

### DEC 2020

A Design Principles Report was prepared for Airspace Change Proposal ACP-2019-86, in accordance with the Regulatory requirements of the CAA, as detailed in CAP 1616. A copy of the report is available on the CAA Airspace Portal.

### Feb 2021

CAA confirmed that Stage 1 of ACP 2019-86 was complete and Stage 2 could be commenced.

# Final Design Principles

| Priority | | Category | |
|---|---|---|---|
| 1 | **SAFETY –** New routes must be safe and must not erode current ANSP safety barriers. | **Core** | **Safety** |
| 2 | **ENVIRONMENTAL CONCERNS –** Arrival routes should, where possible, be designed to minimise the impact of noise below 7000' 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 Performance Based Navigation (PBN). | **Core** | **Operational** |
| 5 | **EFFICIENT ROUTES –** Arrival routes should, where possible, be designed to minimise emissions and optimise operational efficiencies. | **Core** | **Environmental** |
| 6 | **REPLICATION –** Procedures should, where possible, mimic the existing procedure and / or the existing ILS positioning by ATC vectors. | **Core** | **Environmental** |

# AIRSPACE CHANGE PROCESS STAGE 2 – DEVELOP & ASSESS

LONDON BIGGIN HILL AIRPORT

## ROUTE OPTIONS DEVELOPMENT

- Stakeholder responses were analysed and possible Route Options were developed based on existing procedures and other possible options.

- A comprehensive list of Route Options have been developed, in accordance with the requirements of CAP1616- Airspace Change Process.

- The Route Options will be assessed in a Design Principles Evaluation to see how they fair against the Design Principles, which will be followed by an initial Options Appraisal.

- An in-depth appraisal of the assessed Route Options will be carried out and presented in preparation for the Stage 3 consultation.

# Route Options Comprehensive List

CAP 1616 requires LBHA to identify all possible options, but also accepts that there may be limited scope for multiple design options due to, for example, the physical constraints of adjacent airspace and/or procedures. Consequently it is first necessary to set out the constraints that apply in this case.

**CONSTRAINTS**

- Designs should be PANS-OPS compliant. This is the international standard for all Instrument Flight Procedures.
- This change should not necessitate any change to any other air traffic procedure.
- This change should not change any airspace configuration or classification.
- This change is limited to changes at 3000' and below, as procedures above are "owned" by NATS and are not part of this change.

# Route Options
# Comprehensive List

Number OPTIONS 1 – 7 = Approach Path Options

OPTIONS 8 - 12 = Missed Approach Path Options

Letter A = 3° Glideslope

B = 3.2° Glideslope

C = 3.5° Glideslope

D = Direct OSVEV to ALKIN

T = RNAV T-BAR OPTION

**The following Comprehensive List of Route Options have been developed**

# RADICAL OPTIONS

**MULTIPLE ROUTES - PROVIDING DISPERSION**

This has never been successfully introduced into UK airspace and as such would require an enhanced level of safety work, would likely need airspace trials, together with new ATC tools to even be feasible.

Further possibilities lay outside the constraints of this project as they would entail partial or wholesale change to the airspace in the area. These aspects are under consideration within a different airspace change; the Future Airspace Implementation South (FASI-S) airspace redesign work

**Missed Approach Procedure**

An assessment was made as to whether there were any radical options for the MAP even though, as a rarely used routine procedure, these would be limited. Due to the constraints of the project regarding airspace construct and not interfering with other procedures, it was apparent that no MAP option could change the current maximum altitude.

# RADICAL OPTIONS

**RNP – AR A HIGH END SPECIFICATION PROCEDURE DESIGN**

This would limit, considerably, the ability of certain aircraft types and crews to undertake such a procedure due to the requirement for specific CAA approval following specific training. Therefore, this would not meet the resilience criteria and has not been further investigated.

**RNAV – ILS PROCEDURE**

There are currently no established RNAV to ILS Procedures in the UK. To introduce one with this ACP would take a considerable amount of time and technical knowledge to enable the associated safety case. Therefore this option was not pursued further.

# OPTION 1 – Do Nothing

This will mean that when the VOR is removed from service there will be no IFR approach other than the ILS into LBHA on runway 21. In addition, by not implementing a PBN approach LBHA will not be compliant with EASA Regulatory requirements detailed within IR (EU) 20 18/10 48.

# OPTION 2 – Do Minimum

**DETAILS**

2A – Replicate existing procedure.
Radar vectors from OSVEV
3° Glideslope

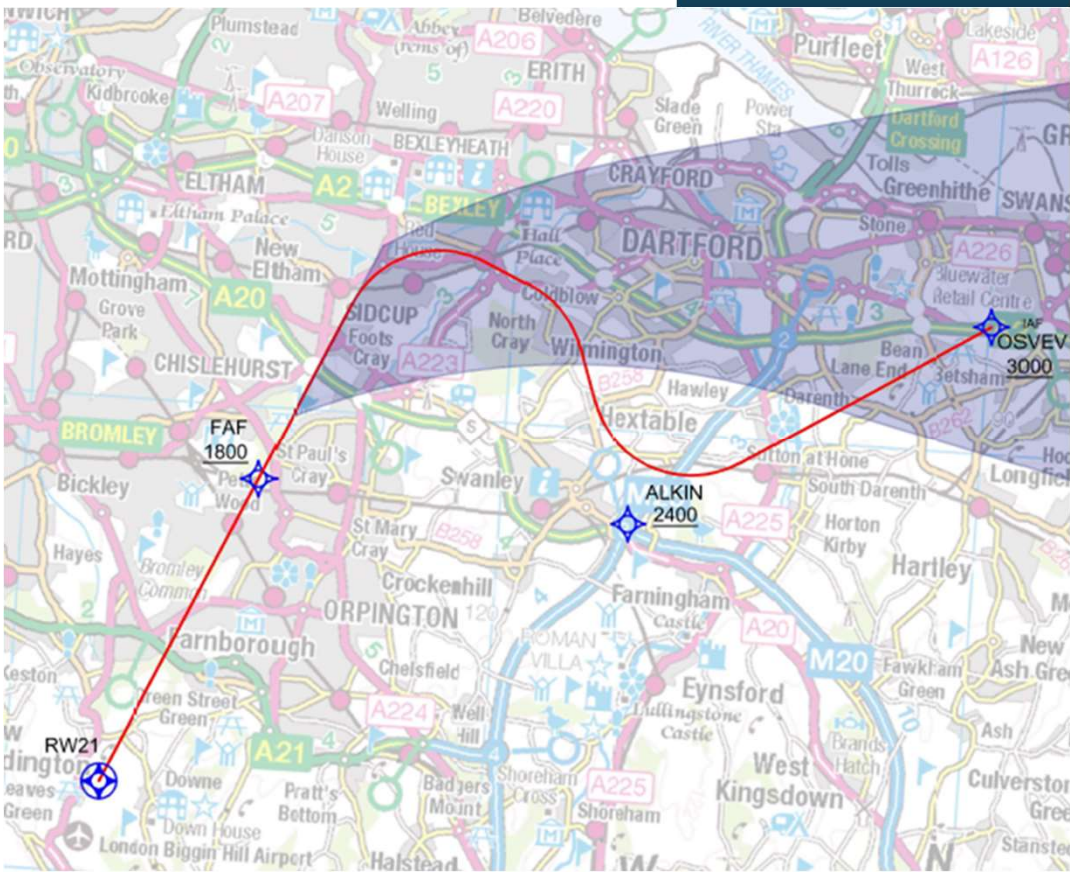
2AD – Replicate existing procedure.
Direct OSVEV to ALKIN
3° Glideslope

2B – Replicate existing procedure.
Radar vectors from OSVEV
3.2° Glideslope

2BD – Replicate existing procedure.
Direct OSVEV to ALKIN
3.2° Glideslope

2C – Replicate existing procedure.
Radar vectors from OSVEV
3.5° Glideslope

2CD – Replicate existing procedure.
Direct OSVEV to ALKIN
3.5° Glideslope



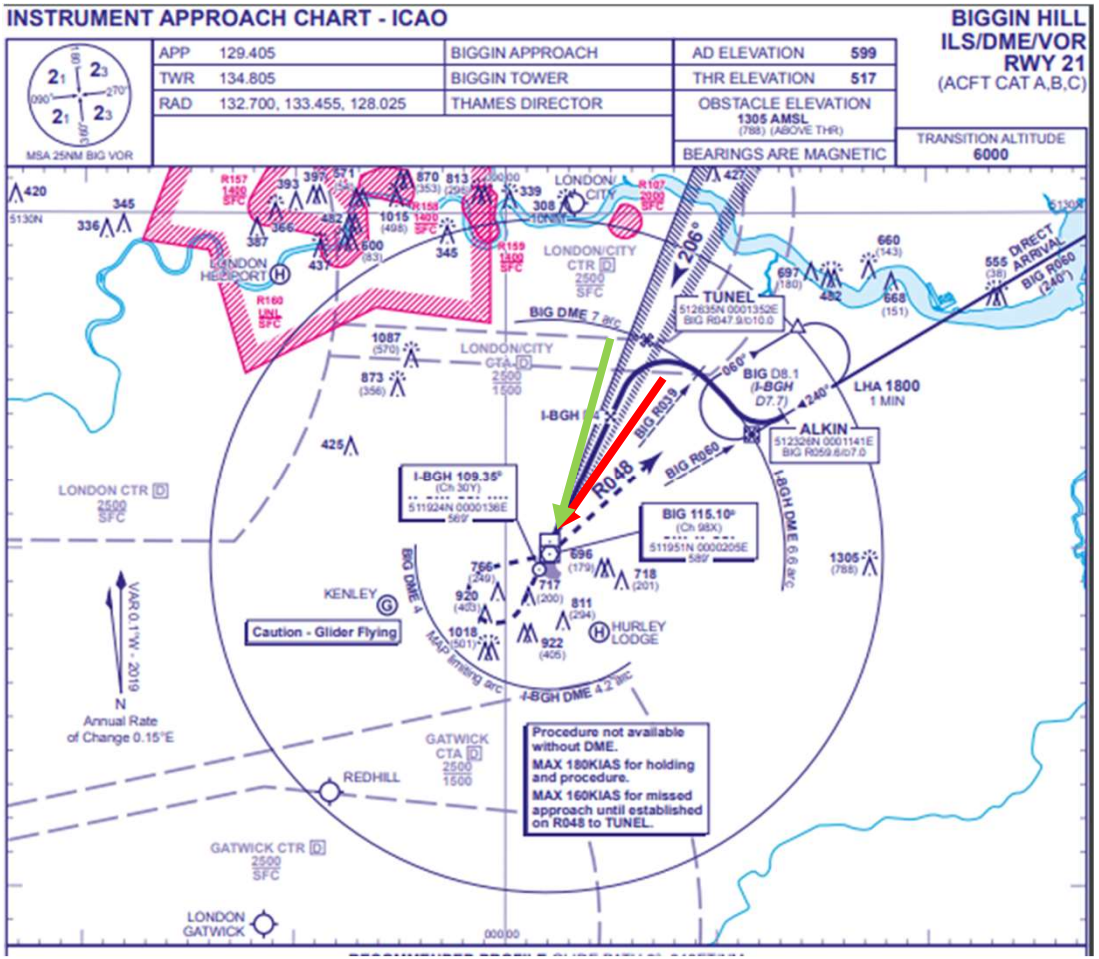

Shaded area indicates existing vectoring area

# OPTION 3 & 4 – Offset Approach

**DETAILS**

3 – Left of Final Approach Track →

4 – Right of Final Approach Track →




**COMMENTS**

Both Options would result in a change to the position of the aircraft as they prepared to land, resulting in overflying new areas previously avoided. Therefore, these options have been discontinued.

# OPTION 5A, B & C – Direct Approach

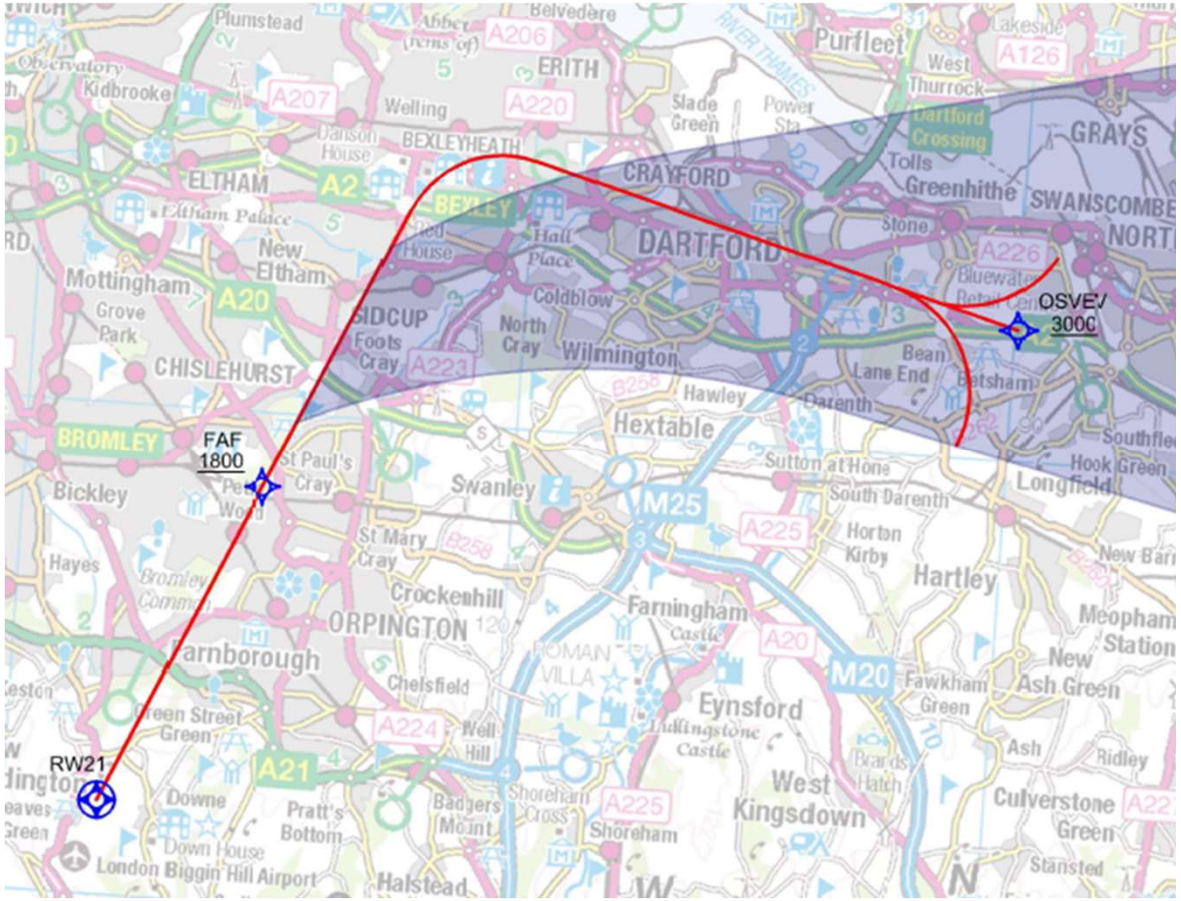
**DETAILS**

Direct Approach from OSVEV to intercept Final Approach Track

5A - 3° Glideslope

5B - 3.2° Glideslope

5C - 3.5° Glideslope




**COMMENTS**

This option will require work to assess whether extant or new procedures will be utilised to exit the network at OSVEV.

Option 5C - The use of this option would require the ILS glideslope to also be increased to 3.5°, this would not change the lateral positioning.

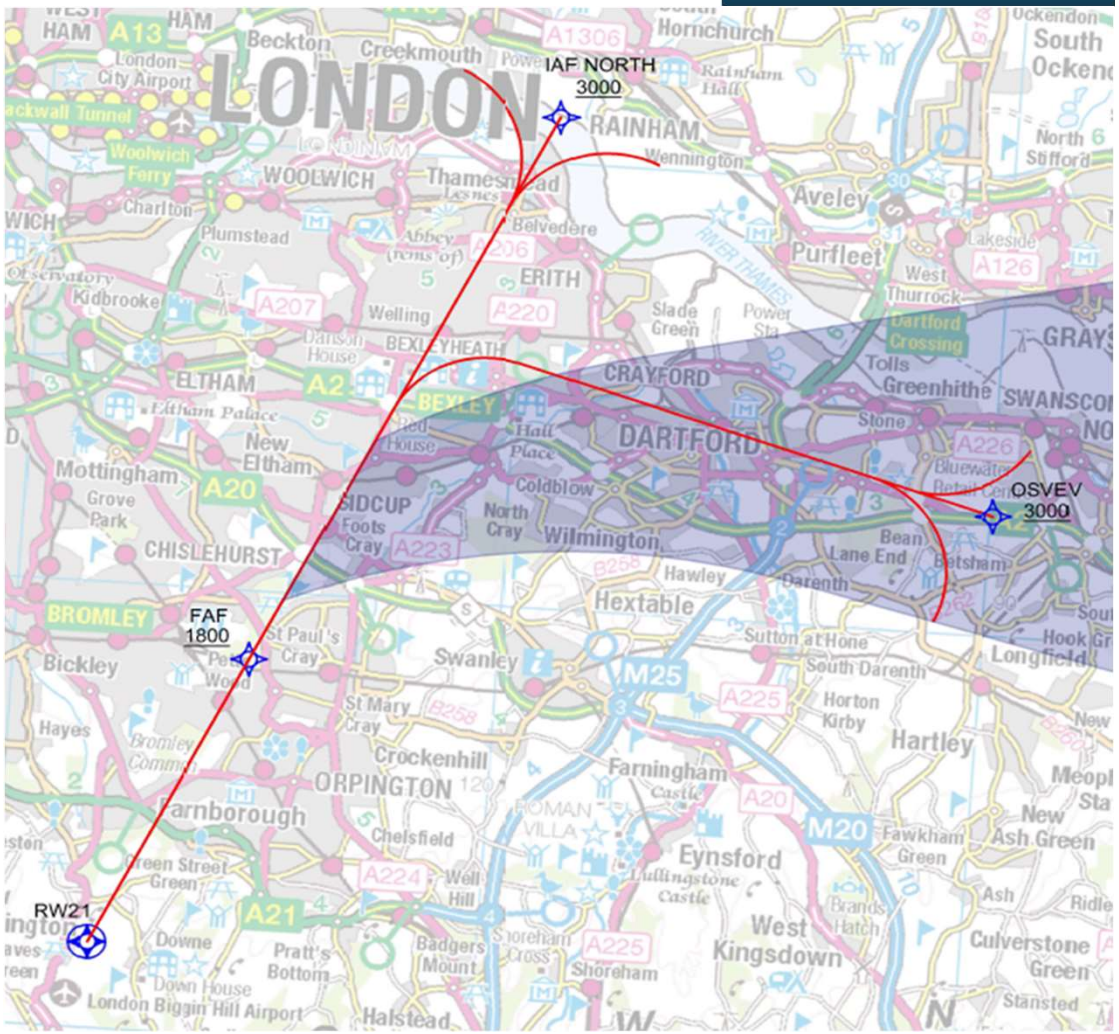
# OPTION 5AT & BT– Direct Approach

**DETAILS**

Direct Approach straight onto Final Approach Track or from OSVEV

5AT - 3° Glideslope

5BT - 3.2° Glideslope




**COMMENTS**

The option from the IAF North will require work to understand the viability due to existing flow control.

This OSVEV option will require work to assess whether extant or new procedures will be utilised to exit the network at OSVEV.

# OPTION 5CT – Direct Approach

**DETAILS**

Direct Approach straight onto Final Approach Track or from OSVEV

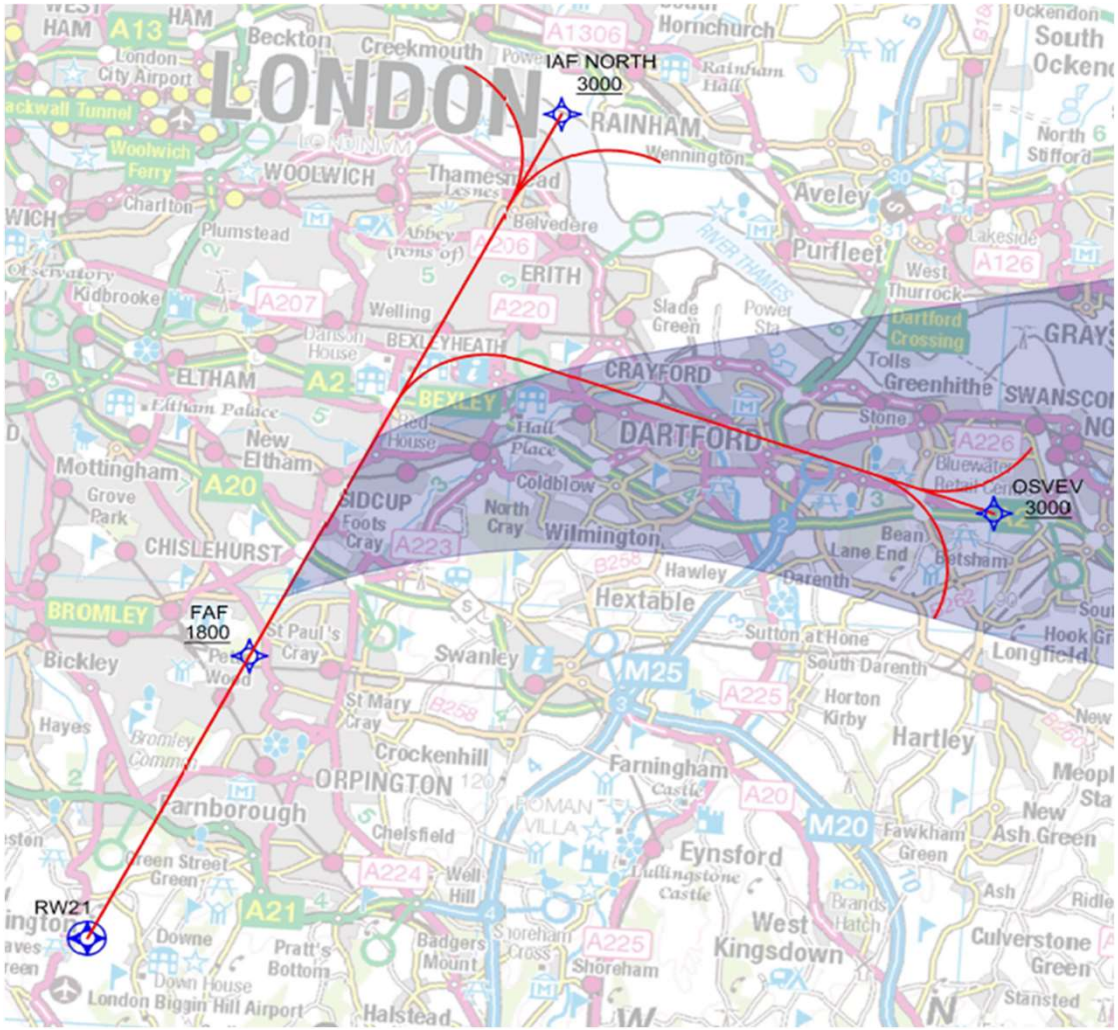
3.5° Glideslope

**COMMENTS**

The use of this option would require the ILS glideslope to also be increased to 3.5°, this would not change the lateral positioning.

The option from the IAF North will require work to understand the viability due to existing flow control.

This OSVEV option will require work to assess whether extant or new procedures will be utilised to exit the network at OSVEV.



# OPTION 6A, B & C – Direct Approach - Southerly

**DETAILS**

Direct Approach from OSVEV to remaining within existing route swathe.

6A - 3° Glideslope

6B – 3.2° Glideslope

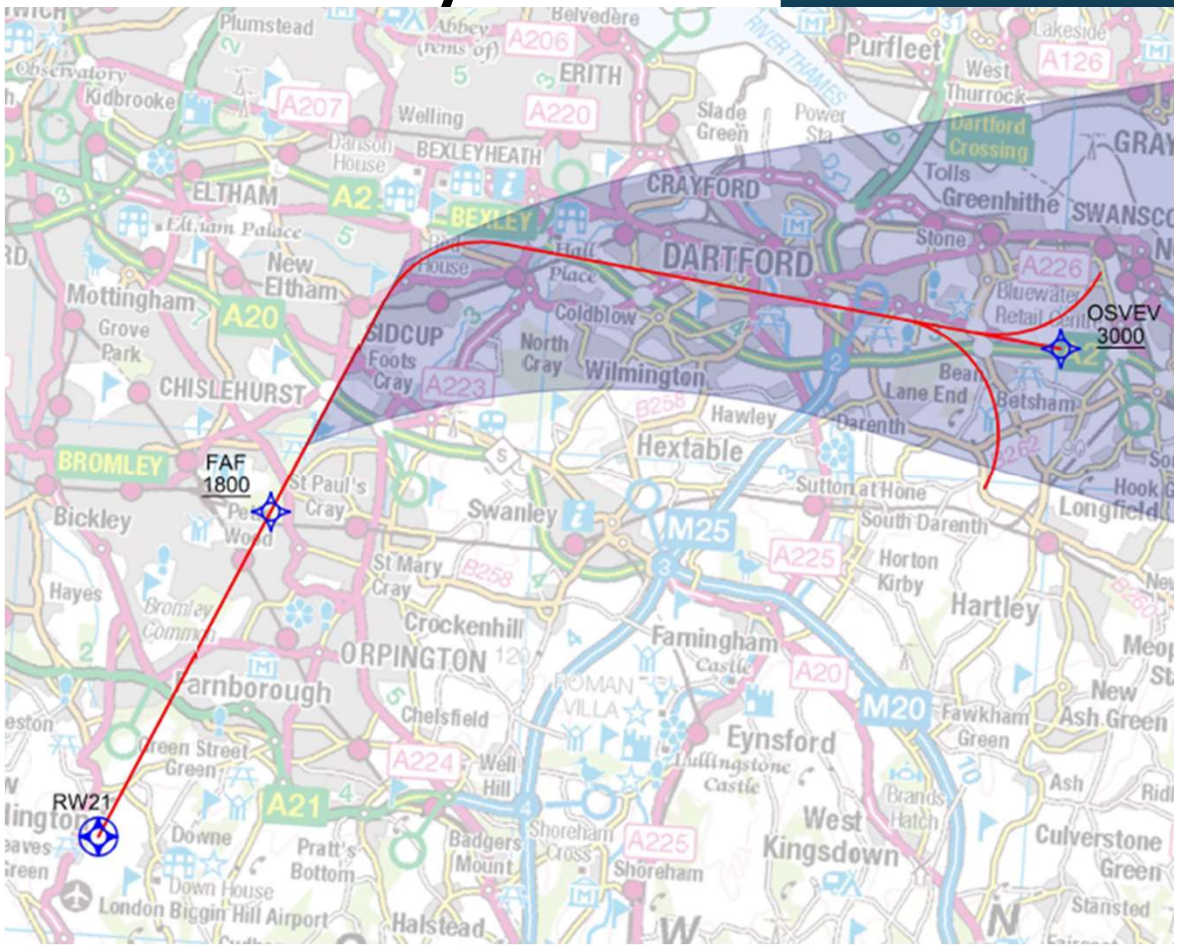
6C – 3.5° Glideslope

**COMMENTS**

Unable to route further South due to the design criteria.

These options will require work to assess whether extant or new procedures will be utilised to exit the network at OSVEV.

Option 6C will require the ILS glideslope to also be increased to 3.5°, this would not change the lateral positioning.



# OPTION 6AT, BT & CT – Direct Approach - Southerly

**DETAILS**

Straight in Approach or direct from OSVEV to remaining within existing route swathe.

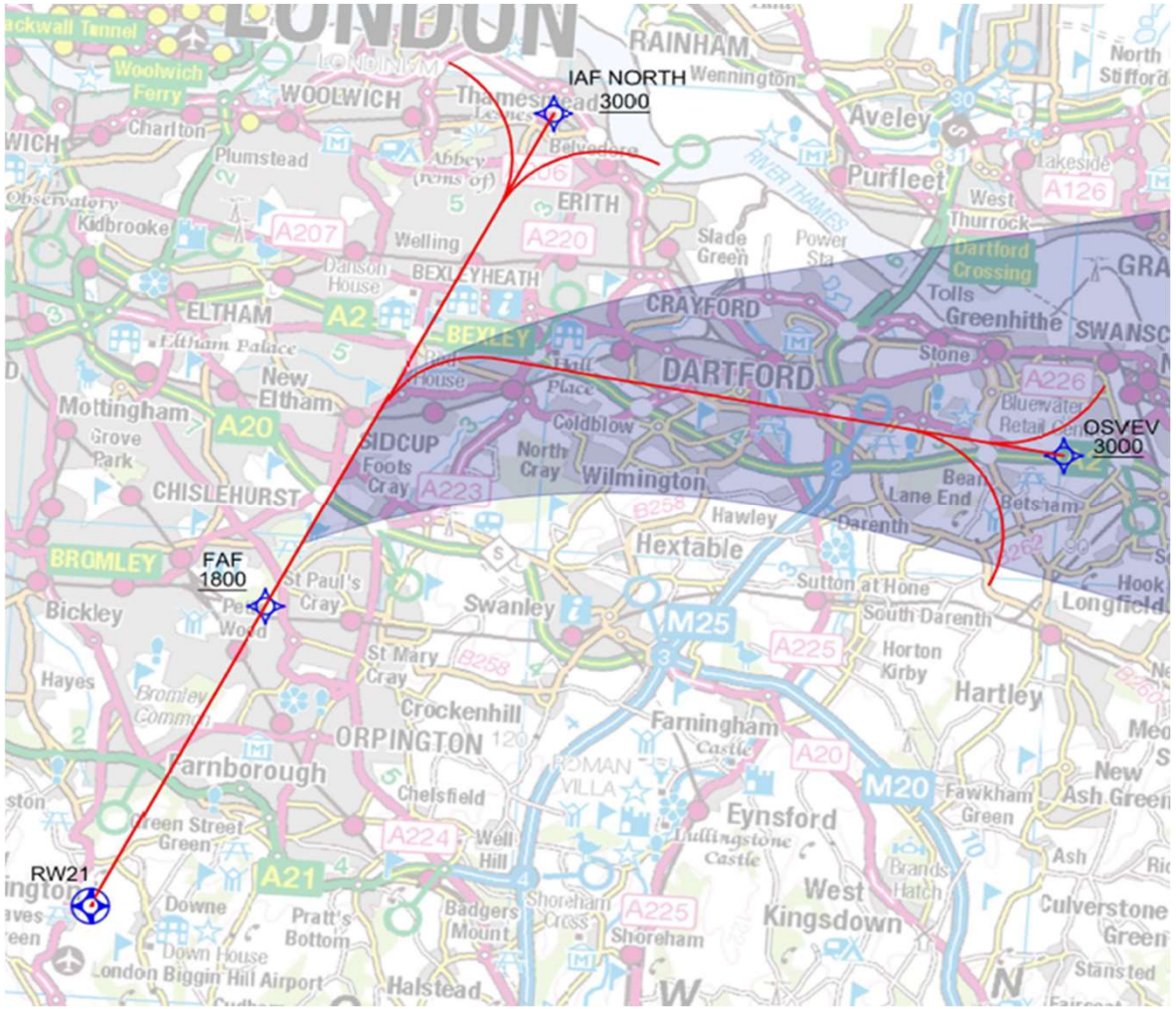
6AT - 3° Glideslope
6BT – 3.2° Glideslope
6CT – 3.5° Glideslope

**COMMENTS**

This option will require work to understand the viability of the IAF North.

Unable to route further South due to the design criteria.

These options will require work to assess whether extant or new procedures will be utilised to exit the network at OSVEV.




Option 6CT will require the ILS glideslope to also be increased, this would not change the lateral positioning.

# OPTION 7A, B & C – Direct Approach - Northerly

**DETAILS**

Direct Approach from OSVEV to remaining within existing route swathe.

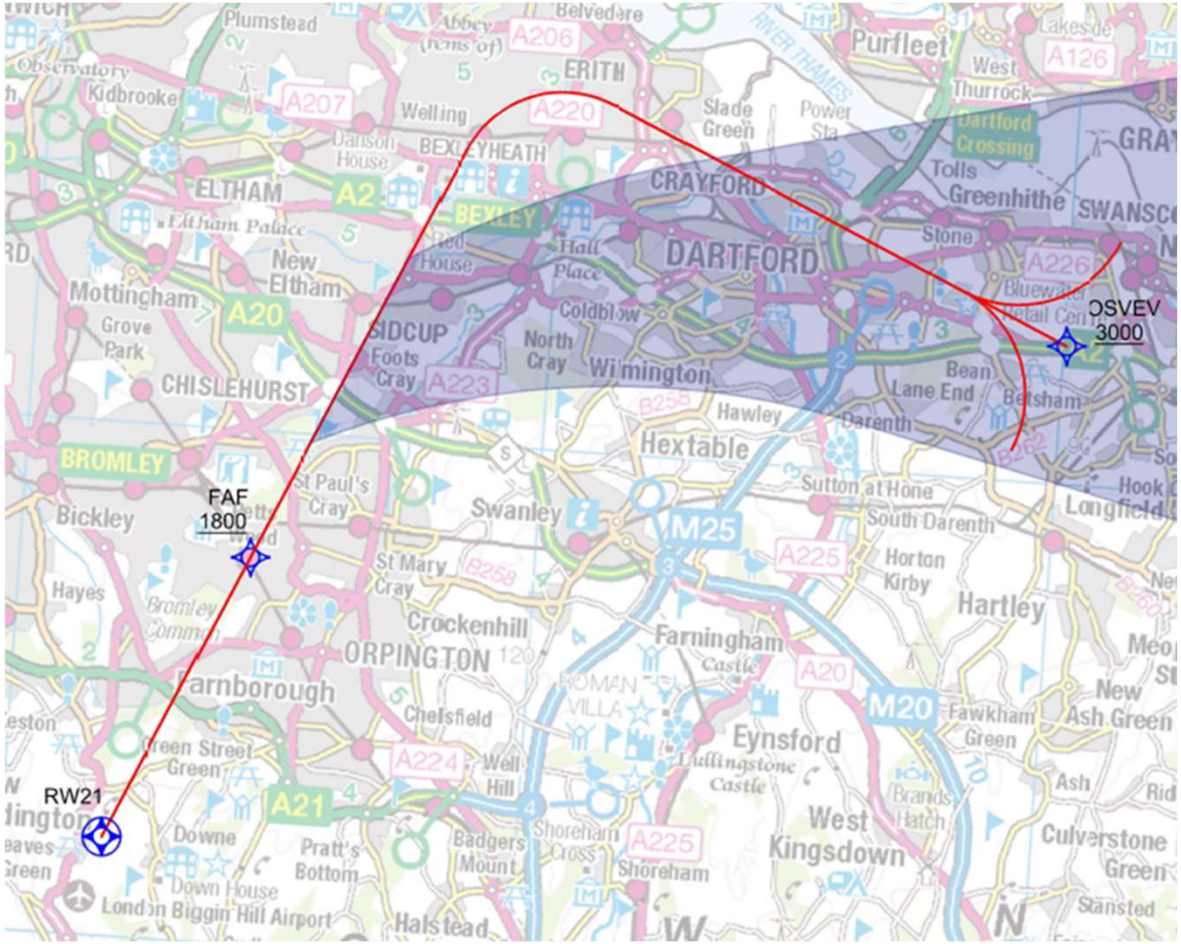
7A - 3° Glideslope
7B – 3.2° Glideslope
7C – 3.5° Glideslope

**COMMENTS**

Unable to route further North due to the design criteria.

These options will require work to assess whether extant or new procedures will be utilised to exit the network at OSVEV.

Option 7C will require the ILS glideslope to also be increased to 3.5°, this would not change the lateral positioning.



# OPTION 7AT, BT & CT – Direct Approach - Northerly

**DETAILS**

Direct Approach from OSVEV to remaining within existing route swathe.

7AT - 3° Glideslope

7BT – 3.2° Glideslope

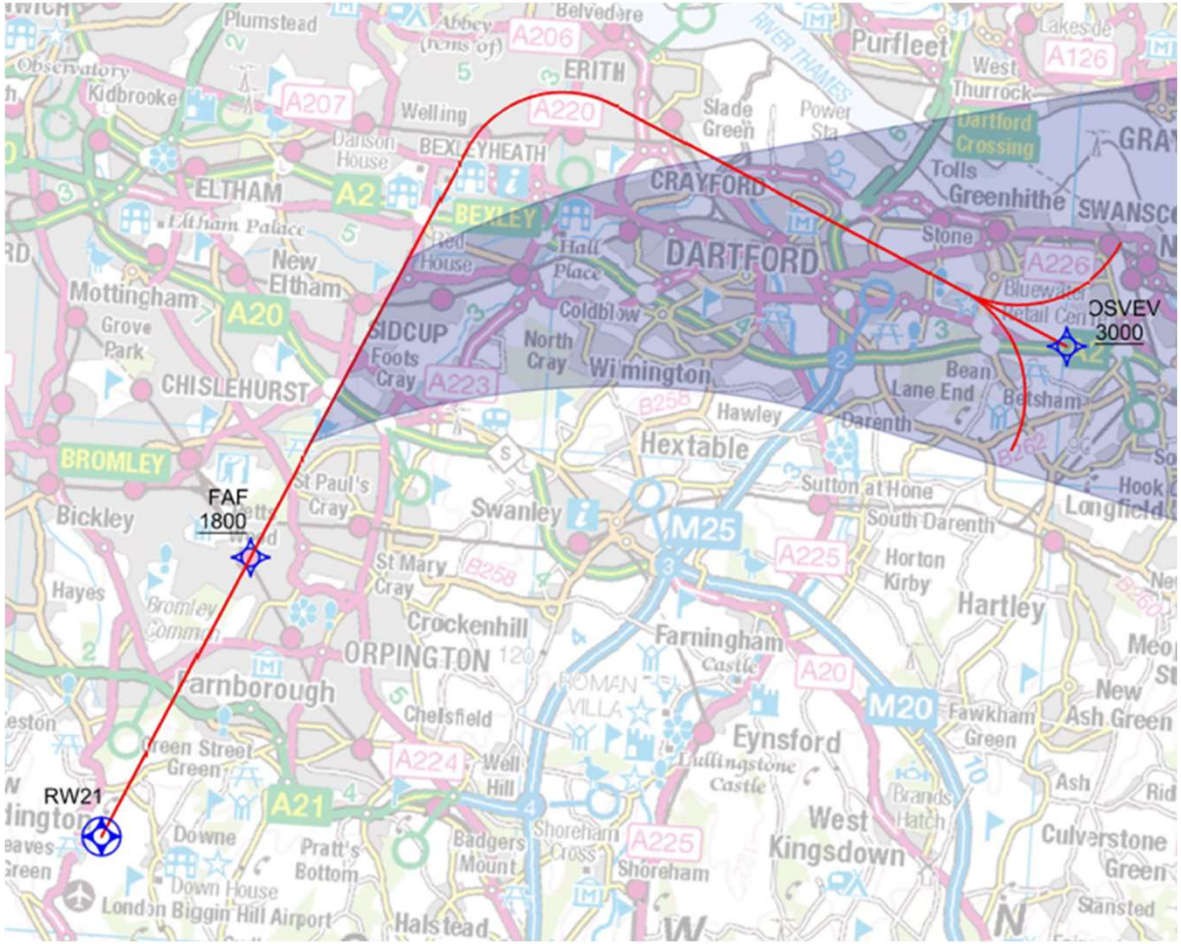
7CT – 3.5° Glideslope

**COMMENTS**

Unable to route further North due to the design criteria.

These options will require work to assess whether extant or new procedures will be utilised to exit the network at OSVEV.

Option 7CT will require the ILS glideslope to also be increased to 3.5°, this would not change the lateral positioning.



# OPTION 8 – Missed Approach

## Do Nothing

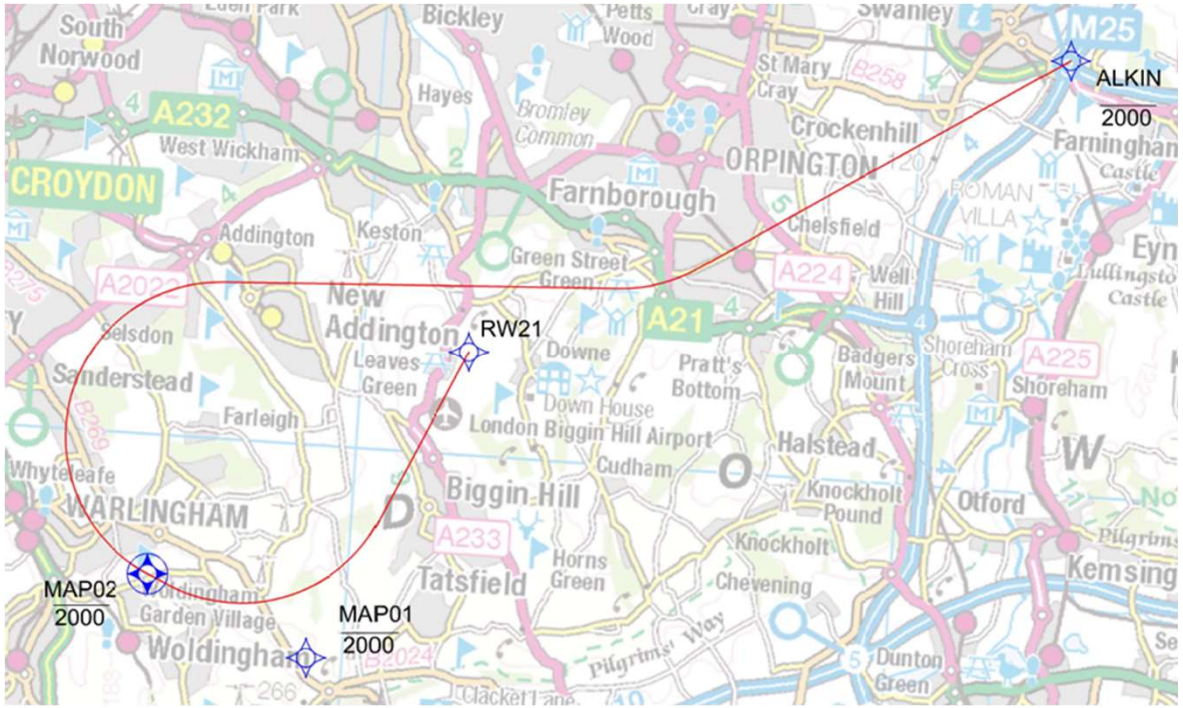
**COMMENT -** This is only available with Option 1 – Do Nothing. The move away from a VOR/DME Procedure will necessitate a new Missed Approach Procedure.

# OPTION 9 – Missed Approach Procedure

# Do Minimum

**COMMENT**

Due to the constraints imposed by the Procedure Design Regulations, it is not possible to do minimum and replicate the existing Missed Approach Procedure.



# OPTION 10 – Missed Approach Procedure

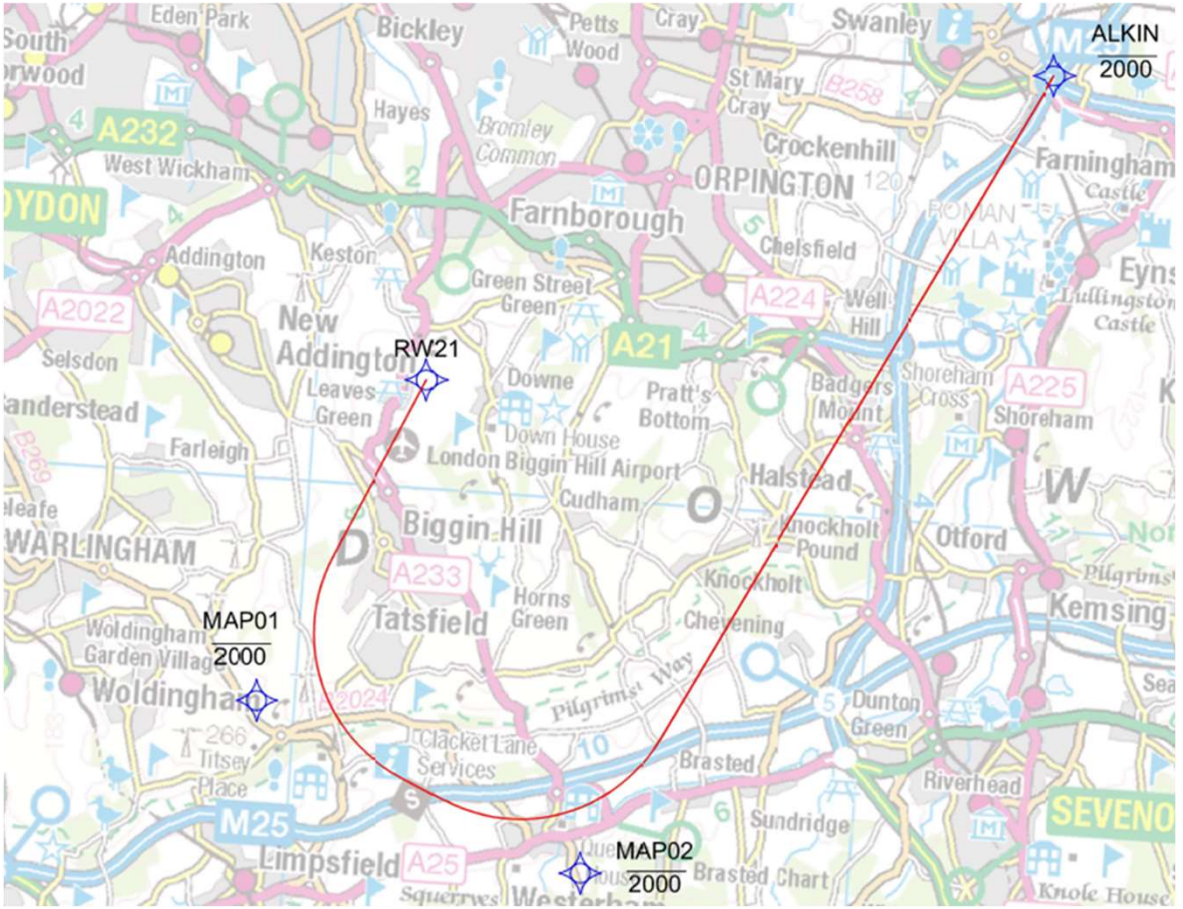
# Left Turn Out

**DETAILS**

Most efficient turn out back to ALKIN

**COMMENT**

This option will require work to deconflict any interactions with Gatwick Air Traffic

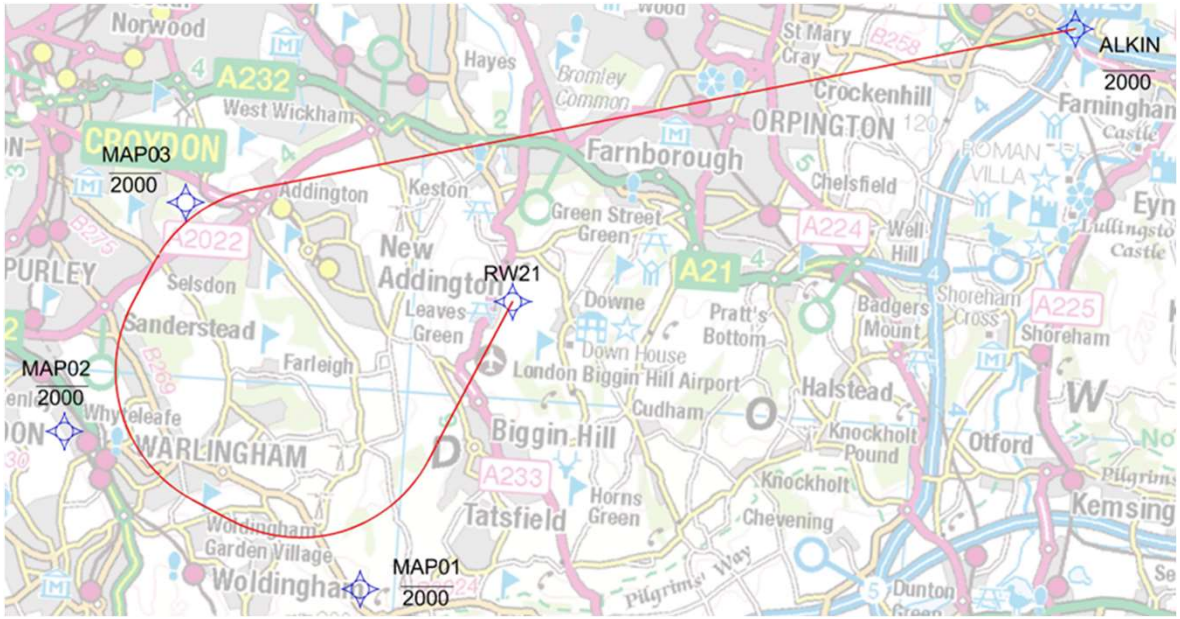


# OPTION 11 – Missed Approach Procedure

# Right Turn Out

**DETAILS**

Most efficient right turn out back to ALKIN



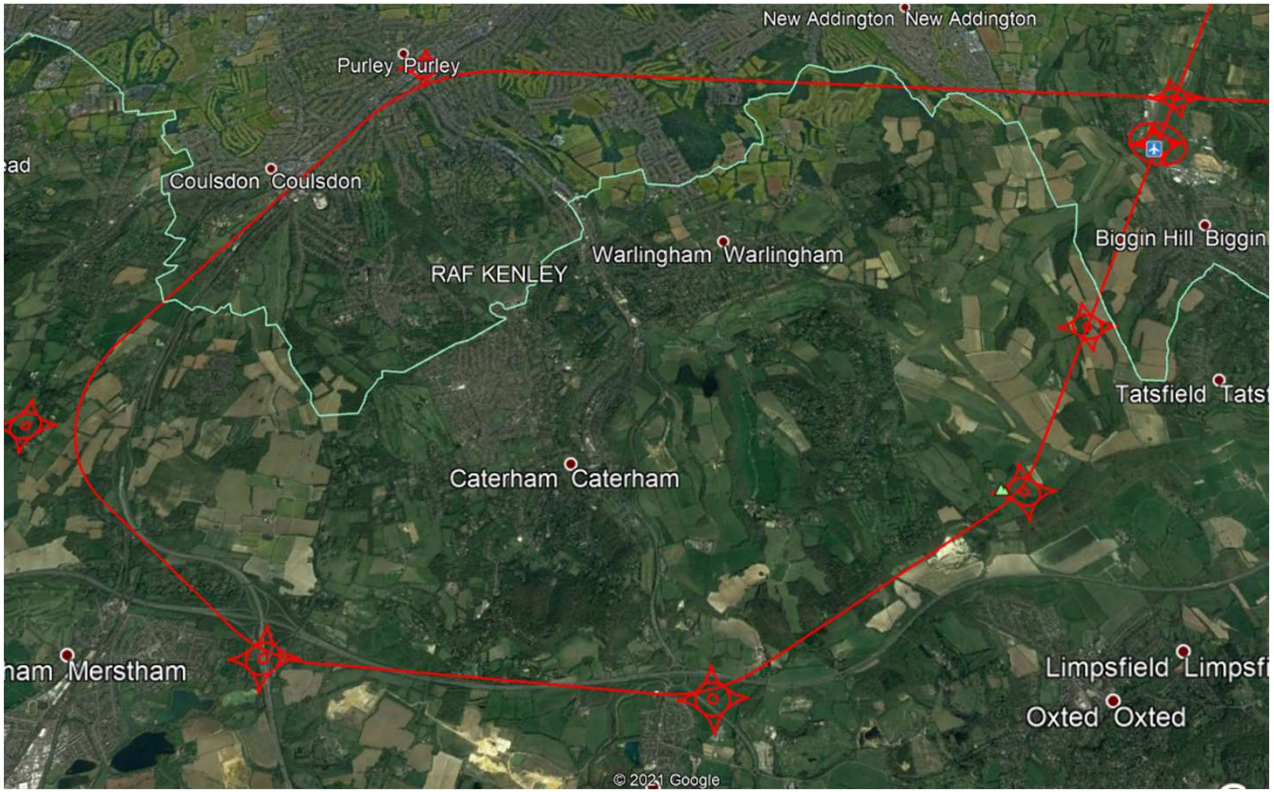

**COMMENT**

This option will require work to assess the first turns interaction with the Gatwick zone, and for the remainder of the right turn, the interaction with RAF Kenley.

# FOCUS GROUP FEEDBACK

## MISSED APPROACH – OPTION 12

This route depicts a possible Option suggested by a stakeholder from the Aviation Focus Group. It has not been developed to PANS-OPS Regulatory requirements and is only a rough guide to depict a Stakeholder proposed Design Option.




**COMMENT -** THIS OPTION WILL BE CONSIDERED ALONGSIDE THE OTHER POSSIBLE OPTIONS AND EVALUATED AGAINST OUR DESIGN PRINCIPLES.

# AIRSPACE CHANGE PROCESS

## Next Stages – CAP 1616

| AIRSPACE CHANGE CAP 1616 STAGE | ESTIMATED COMPLETION DATE |
|---|---|
| Stage 1 – Define | COMPLETE |
| Stage 2 – Develop and Asses - **CURRENT STAGE** | 25 June 2021 |
| Stage 3 - Consult | 24 September 2021 |
| Stage 4 – Update and Submit ACP | 25 March 2022 |
| Stage 5 - Decide | 25 November 2022 |
| Stage 6 - Implementation | February 2023 |

# More Information?

All of this information is publicly available on the CAA Website:

- Airspace Change – CAP 1616
- Airspace Change portal – London Biggin Hill Airport
- Airspace Modernisation Strategy

As a reminder, the full consultation is expected through this summer, when all details of the preferred Design Options for the 21 RNAV Approach will be made available and consulted on.

If you require any further information or explanations please contact me at *21rnavacp@bigginhillairport.com*.

# Summary

This Airspace Change Proposal is only about replicating an existing procedure, as best we can, so we expect the impact to be minimal.

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# We will now respond to chat QUESTIONS