LONDON
BIGGIN HILL
AIRPORT

AIRSPACE CHANGE

NEW INSTRUMENT APPROACH PROCEDURE

London Biggin Hill Airport (LBHA) has embarked on a process to change the airspace arrangements around the airport. This process is known as an Airspace Change Process (ACP). The process requires active engagement with our stakeholders throughout, and this webpage has been developed to help this process. It contains relevant information which will help stakeholders as we actively seek your feedback, positive and negative.

Background

This Airspace Change is titled RNAV (GNSS) Runway 21 and has been allocated the reference ACP-2019-86 by the CAA. Details can be viewed on the CAA Airspace Change Portal: https://airspacechange.caa.co.uk/

This change process has been started for 2 reasons:

- It is a requirement in order to be compliant with EASA Regulatory requirements detailed within IR (EU) 20 18/10 48, and in doing so, will meet the requirements within the CAA Airspace Modernisation Strategy.

- If successful, it will also add a layer of resilience to the airport operation by providing a second instrument approach in the event that the current procedure is unavailable.

We are progressing this change in accordance with the formal guidance from the CAA detailed in CAP 1616. The process consists of 7 stages as shown below; we have completed Step 1A and we are currently in Stage 1, at Step 1B.

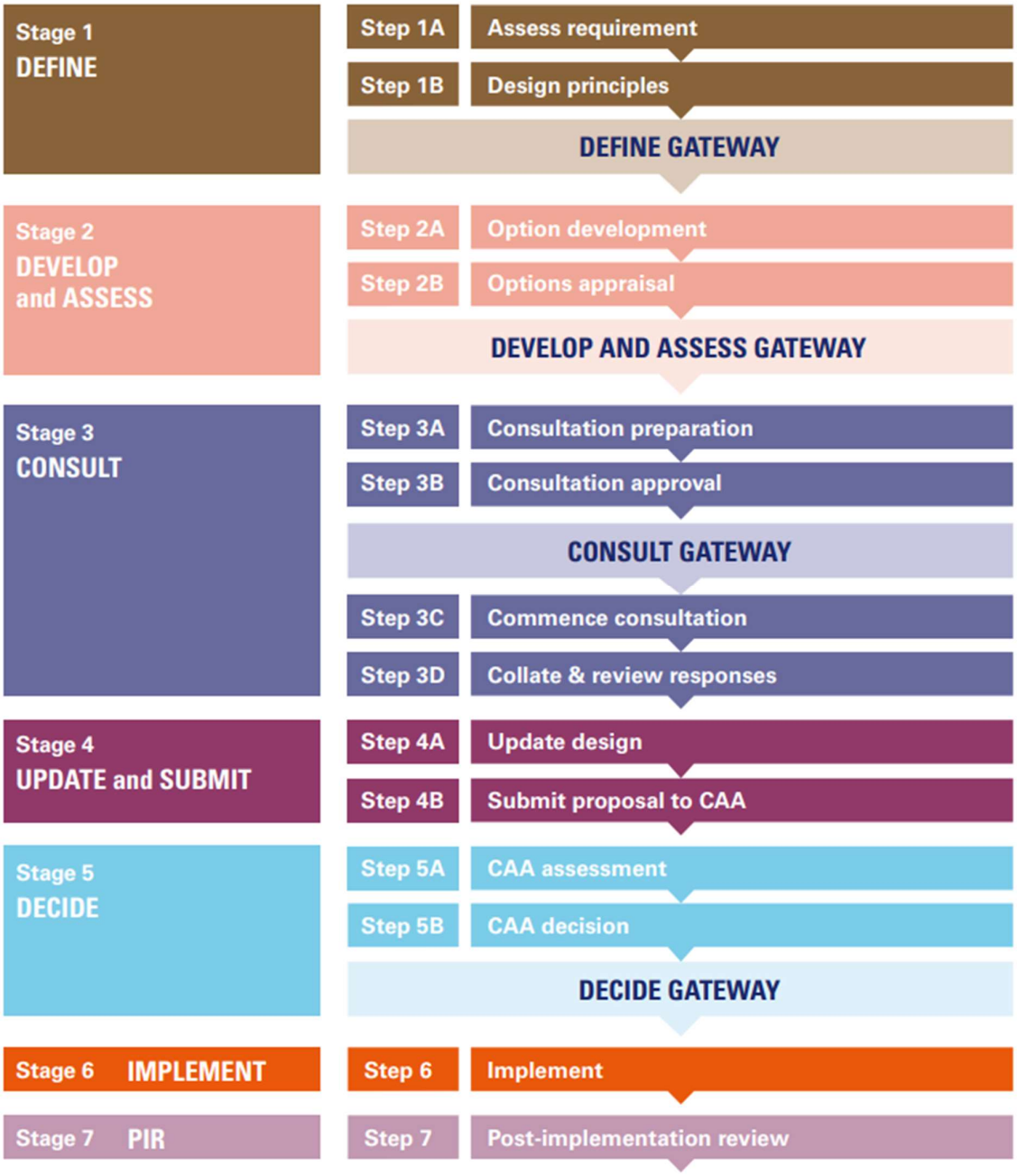

Figure 1 Overview of the airspace change process

How can you help?

In Step 1B, the CAA requires us to develop a set of Design Principles, which will inform the design of the new arrival route that aircraft can chose to utilise to make an approach to Runway 21. CAP 1616

states that it is important for Design Principles to be drawn up through discussion between the Change Sponsor (in this case – LBHA) and potentially affected stakeholders at the early stages of the airspace change process. We understand that everyone has their own perspective about what is important, and therefore we have started the process of engagement with our stakeholders. The aim of this engagement is to ensure that LBHA has a good level of understanding of the design considerations that are important to all our stakeholders; this includes aviation and non-aviation stakeholders.

General Information

To explain this change in more detail it is necessary to use some aviation terminology. We have provided some facts and explanations below which we hope are useful.

- Runways at LBHA
  We have 2 runways – Runway 21 and Runway 03. Runway 21 is an Instrument Runway which means that we have a procedure associated with the runway which provides Approach information in less than ideal weather conditions. Runway 03 is a visual runway, with no associated approach aids or procedures at the moment. When choosing which runway to use, the direction of the wind is important. For safety and performance reasons aircraft typically take off and land into wind. In the UK, the wind is mostly from the south-west, this means that the majority of aircraft come into land from the north-east, which means that Runway 21 is the most used runway at LBHA.

- What is an Instrument Landing System (ILS)?
  The ILS is navigational aid that uses radar to guide aircraft on to a final approach, normally within 8 – 10 miles from touchdown. The point at which an aircraft joins the final approach varies due to conditions on the day and or vectoring by the controllers. Aircraft will then utilise the ILS which transmits two radio beams to provide pilots with vertical and horizontal guidance during the final approach to landing. Pilots interpret instruments in the cockpit which receive the information from the radar beams, and are guided to the runway, following a 3-degree approach angle.

- What is RNAV/GNSS?
  These terms both fall under another term known as PBN - Performance Based Navigation (PBN). This is the key to achieving airspace modernisation as it improves accuracy of where aircraft fly by moving away from outdated and conventional navigation using ground-based beacons, such as the ILS, to modern satellite navigation. This is similar to the sat navs that most people have in their cars today. PBN is being introduced across the world. The new technology allows more flexible positioning of routes and enables aircraft to fly them more accurately. This helps improve operational performance and reduce delays. LBHA needs to introduce PBN to comply with EASA Regulatory requirements detailed within IR (EU) 20 18/10 48 and to meet our commitments to the Government's Airspace Modernisation Strategy. For more information on PBN you may like to read the CAA's document on "Airspace Design Guidance: Noise mitigation consideration when designing PBN departure and arrival routes" known as CAP 1378, available through the CAA website https://www.caa.co.uk/Our-work/Publications/Publications/

- What is a Missed Approach Procedure?
  Occasionally it is necessary for the pilot of an aircraft to abort a landing. There is an established procedure to follow when this occurs that is known as a Missed Approach or a go-around. This is where the pilot aborts the landing and then re-joins the landing pattern. It is a well-practiced and safe procedure which pilots and air traffic controllers are trained

and prepared for. Although there are many reasons for a go-around they can often be caused by periods of strong winds and adverse weather.

Specific Information

When Runway 21 is the landing runway, most aircraft make an approach to land using the existing Instrument Landing System (ILS). Figure 2 below shows the procedure routing for the ILS/DME Instrument Approach to Runway 21: the full blue line shows the arrival route from 3000ft to just above touchdown on the runway and the dotted blue line shows a rarely used procedure called the Missed Approach which is used when a landing has not been possible, and a second attempt at an ILS approach will be required.

Please note:

- when aircraft fly this ILS approach today, they DO NOT follow the lines depicted exactly, they can be "on track" and flying in accordance with the procedure but be in a swathe around the blue lines shown below.
- Aircraft can be vectored by air traffic control to maintain safety; this will not change.
- We have no plans to change any routes above 3000ft
- At this stage of the process we believe that any change over the ground will be minimal

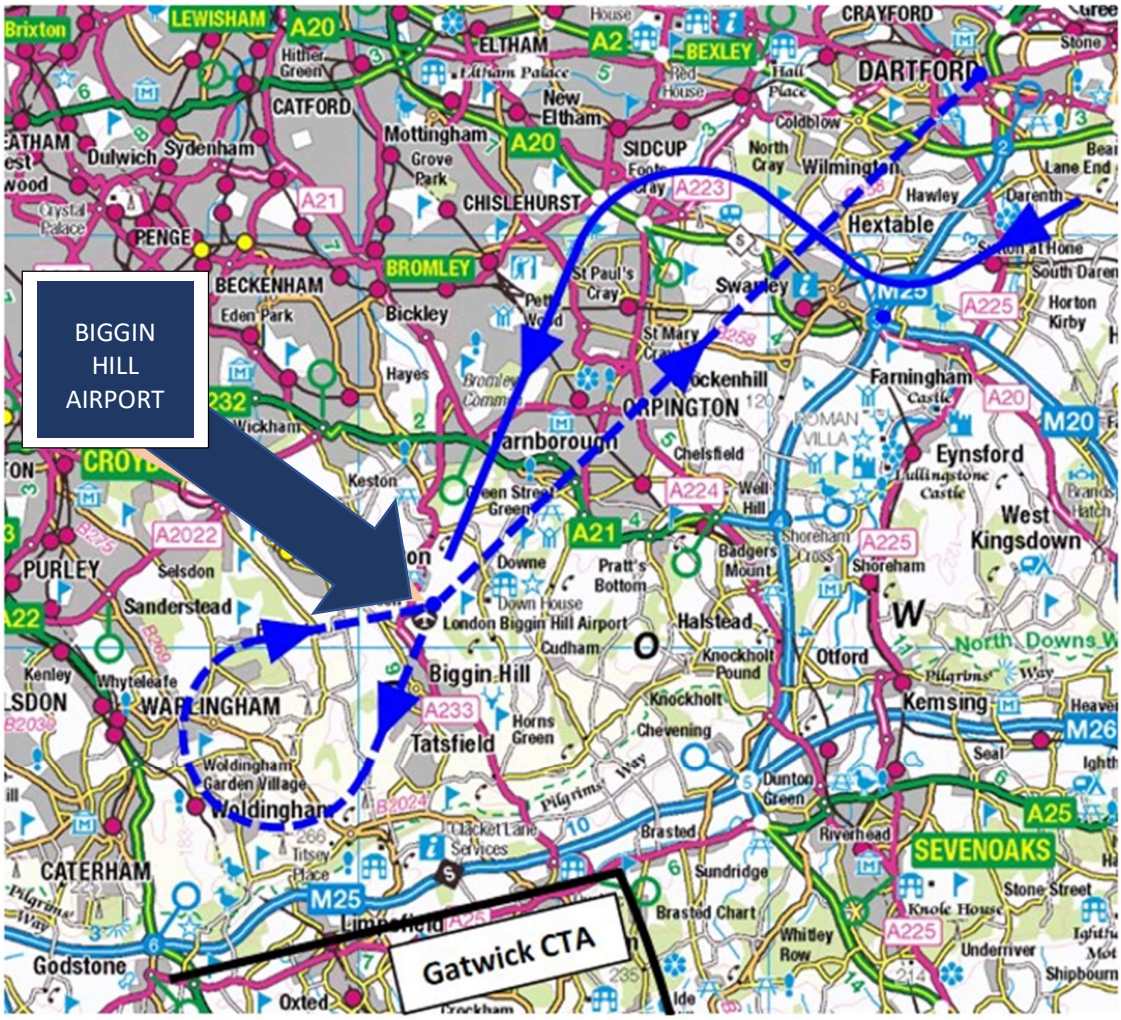

Figure 2 – Runway 21 ILS and Missed Approach Procedure

Figure 3 below shows the current Instrument Approach chart for the ILS/DME procedure.

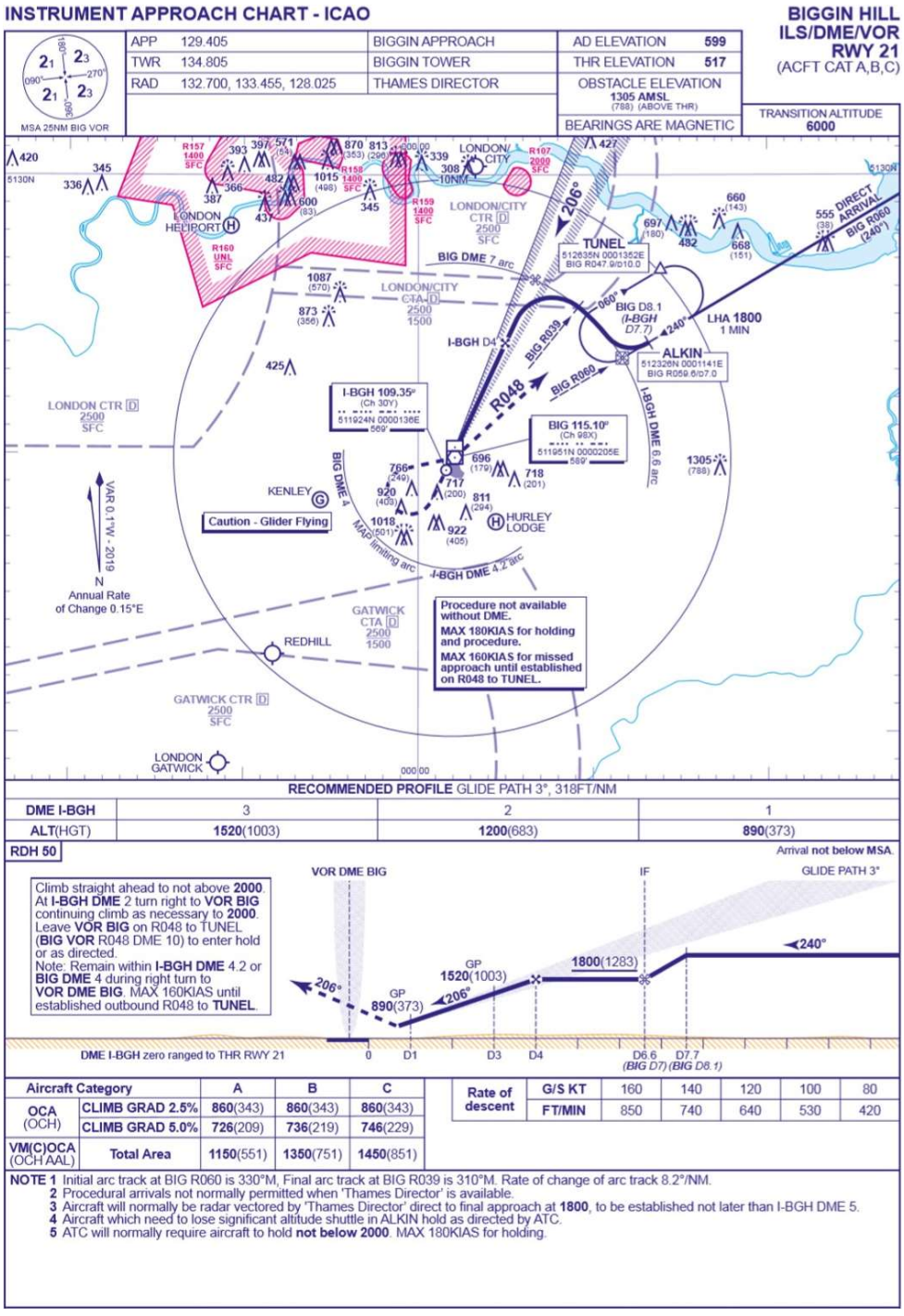

Figure 3 – Runway 21 Instrument Approach Chart ILS/DME/VOR Runway 21

Draft Design Principles

To help begin this engagement we have developed the following set of draft design principles. You may wish to see design principles that have been developed in other ACPs, if so please visit the CAA Airspace Change Portal https://airspacechange.caa.co.uk/

We believe that these design principles provide a balance between what is required to fulfil the scope of this project and the environmental concerns that any change brings. For instance, Design Principle D will support the development of options that relate to keeping aircraft higher for longer, continuous descent profiles and possible increased glideslopes as these characteristics help us to minimise aircraft noise.

	Draft Design Principle		Category
A	SAFETY – New routes must be safe	Core	Safety
B	COMPLIANCE – Route should, where possible, be designed to be PANS OPS compliant	Core	Technical
C	NAVIGATION STANDARDS - New routes must be designed to use Performance Based Navigation	Core	Operational
D	ENVIRONMENTAL CONCERNS - Arrival routes should, where possible, be designed to minimise the impact of noise below 7,000 ft and should avoid the overflight of populations not previously overflown	Desirable	Environmental
E	EFFICIENT ROUTES - Arrival routes should, where possible, be designed to minimise emissions and optimise operational efficiencies.	Desirable	Environmental
F	REPLICATION – Procedure should be designed to mimic existing procedure where possible, whilst meeting the requirements of DP 2 & 3. This will minimise the requirement to overfly areas not previously overflown by aircraft making an ILS Approach.	Core	Environmental

Figure 4 Draft Design Principles

To assist with further development of the design principles, LBHA requests comment and feedback, positive or negative from our stakeholders, both aviation and non-aviation.

Identification of Stakeholders

To enable us to identify the relevant stakeholders for this airspace change, we have established a geographical Stakeholder Area based on the Statement of Need, the current surrounding airspace construct that we will work with, and the expertise of procedure designers providing the widest possible proposed area. The Red circle indicates the geographical area which will be the focus of our initial engagement.

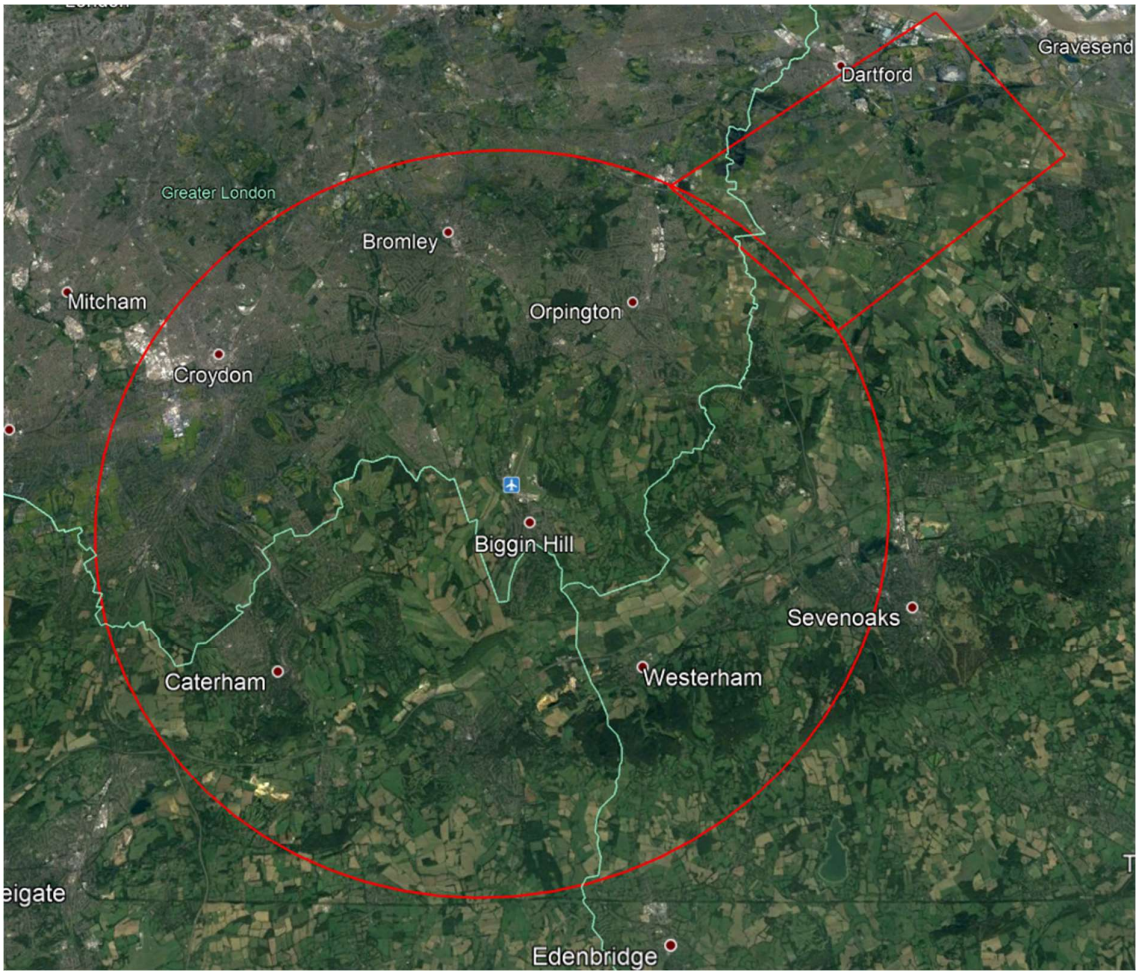

Figure 4 – Geographical Engagement Area (Surrounded by RED boundary)

Non-aviation stakeholders include Local Government Authorities, Members of Parliament, members of the airport's consultative committee, national organisations and local resident associations and individuals. The aviation stakeholders include local Airlines, the local General Aviation (GA) community, airport operators and air navigation service providers (ANSP) and members of the National Air Traffic Management Advisory Committee (NATMAC). As part of the CAP 1616 process we have to maintain a record of contact with all our stakeholders.

Please note that this engagement is not the formal consultation. The formal consultation comes at Stage 3 (see figure 1).

Your Feedback

We ask that you consider our draft design principles and rank them in priority order, with 1 being the highest priority and therefore the most important to you.
Additionally, you may like to tell us why you disagree with any of the principles, or you may wish to suggest changes or describe new principles that we should consider. Please also advise us of any other issue or constraint you feel should be considered in our design process. We welcome your feedback

Please complete this and return it to us by **13th November 2020.** If you feel that you require more time to provide feedback, please advise via email at 21RNAVACP@bigginhillairport.com, at the earliest opportunity.

Unfortunately, due to the current CoVID 19 restrictions we are unable to hold any face to face meetings. But please contact us at 21RNAVACP@bigginhillairport.com if you require clarification of either the design principles or the process, and we will be in touch.

Next Steps

Once we have received all the responses, we will analyse and theme them, and determine how they can be included. For example, an additional constraint might be included with a slight adjustment to wording of one of our draft design principles. Once we have analysed the responses, we will develop a revised list of design principles which we will share with our stakeholders.