

London Biggin Hill Airport -

Proposal to introduce an
Instrument Approach Procedure to
Runway 03

Report of the Supplementary Consultation

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Executive Summary

This is a **Report of the Supplementary Consultation** carried out by London Biggin Hill Airport (LBHA) about a proposal to introduce an Instrument Approach Procedure (IAP) to Runway 03 at LBHA. The **Supplementary Consultation** was carried out between **27 February and 10 April 2017**, a consultation period of 6 weeks as specified by the Civil Aviation Authority (CAA).

The **Supplementary Consultation** was necessary because of changes to the original procedure design which were made following the initial **Sponsor Consultation** carried out by LBHA between 18 November 2015 and 26 February 2016. The changes to the procedure design were necessary to resolve operational interactions between the proposed procedure and other extant Instrument Flight Procedures from adjacent Airports in the London Terminal Control Area and to revisit some environmental concerns identified in responses to the **Sponsor Consultation**.

The list of consultees, again subject to agreement and approval by the CAA, comprised those aviation and community stakeholders that might be affected by the changes to the proposed IAP configuration. However, as with all consultations of this nature, responses from other aviation organisations, community organisations or members of the public were welcome and have been taken into account in this Report.

A total of 97 responses to this **Supplementary Consultation** were received by LBHA. 19 were from the listed consultees and 78 were from other organisations or individuals.

The low response from the consultee stakeholders in the aviation community was disappointing. In total 10 of the formal aviation consultee stakeholders (on-Airport, off-Airport and NATMAC Civil) responded with varying degrees of support or concern about the proposal. Conversely, the majority of responses received from other non-consultee airspace users objected to the potential impact of the proposed IAP on General Aviation operations in Class G airspace.

Whilst there was some support from those communities to the south of the M25 who would no longer be overflown by aircraft carrying out the IAP, this was more than balanced by concerted opposition from communities closer to the M25 where the adjusted nominal track of the IAP lies to the north of the M25 as it turns towards the final approach path to LBHA.

Details and analysis of the responses are given in the body of this Report, together with the conclusions reached by LBHA.

LBHA extends its thanks to all those who took the time to respond to this consultation.

Abbreviations

	Airports referenced in this document
LBHA	London Biggin Hill Airport
LGW	London Gatwick Airport
LHR	London Heathrow Airport
	Other airports are referenced by their unabbreviated names.

aal	Above Aerodrome Level
ACP	Airspace Change Proposal
ADC	Aerodrome Control
ALT	Altitude
amsl	Above Mean Sea Level
ANSP	Air Navigation Service Provider
APC	Approach Control
ATC	Air Traffic Control
ATM	Aerodrome Traffic Monitor
ATM	Air Traffic Management
ATS	Air Traffic Services
ATZ	Aerodrome Traffic Zone
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAS	Controlled Airspace
CAT	Commercial Air Transport
CTA	Control Area
CTR	Control Zone
FAF/FAP	Final Approach Fix/Point
FAS	Future Airspace Strategy
FASVIG	Future Airspace Strategy VFR Implementation Group
GA	General Aviation
GNSS	Global Navigation Satellite Systems (space-based navigation aid, e.g. GPS)
HAL	Heathrow Airport Ltd
IAP	Instrument Approach Procedure
IAS	Indicated Air Speed

IAWP	Initial Approach Way Point
ICAO	International Civil Aviation Organisation
IF	Intermediate Fix
IFR	Instrument Flight Rules
ILS	Instrument Landing System
Km	Kilometre
kt	Knots – Nautical Miles per Hour
LAA	Light Aircraft Association
LARS	Lower Airspace Radar Service
LFA	Local Flying Area (Redhill)
LNAV	Lateral Navigation (as used in RNAV IAP operations)
LTCC	London Terminal Control Centre
LTMA	London Terminal Control Area
MATS	Manual of Air Traffic Services
NATMAC	National Air Traffic Management Advisory Committee
NATS	The en-route and terminal Air Navigation Service Provider (Previously National Air Traffic Services)
NM	Nautical Mile
OCA/OCH	Obstacle Clearance Altitude / Height
PBN	Performance Based Navigation
RA	Resolution Advisory
RNAV	Area Navigation
SARG	Safety and Airspace Regulation Group of the UK CAA
SBAS	Satellite-based Augmentation System
SID	Standard Instrument Departure
TCAS	Traffic Collision Avoidance System
TMA	Terminal Control Area
TWR	Aerodrome Control
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
VNAV	Vertical Navigation (as used in RNAV Precision Approach operations)
VOR	VHF Omni-Directional Radio Range (ground-based navigation aid)
VRP	Visual Reference Point

References

- [1] CAP 725 CAA Guidance on the Application of the Airspace Change Process
- [2] CAP 785 Approval of Instrument Flight Procedures
- [3] ICAO Doc 8168 (PANS-OPS) Volume 2 Construction of Instrument and Visual Flight Procedures
- [4] DfT Guidance to the CAA on the Environmental Objectives Relating to the Exercise of its Air Navigation Functions (January 2014)
- [5] CAP 1184 The Transition to Performance Based Regulation
- [6] CAP 1378 Airspace Design Guidance: Noise mitigation considerations when designing PBN departure and arrival procedures
- [7] CAP 1385 Performance-Based Navigation: Enhanced route-spacing guidance
- [8] Implementation of Performance-Based Navigation in the UK
- [9] ICAO Doc 9613 Performance Based Navigation Manual
- [10] CAA Future Airspace Strategy
- [11] CAA Policy Statement - *Policy for the Application of PBN in UK and Irish Airspace*
- [12] CAA Policy Statement - *Significant Point Name Codes (5LNC) (14 October 2013)*
- [13] CAP 670 Air Traffic Services Safety Requirements

Notes

- A. *This list of reference documents is pertinent to the development of the proposed IAP as a whole, rather than solely to this Report document.*
- B. *Since the development of the proposed LBHA IAP and the Supplementary Consultation material, the CAA has published a number of new guidance documents pertinent to the Airspace Change Process. Many of these new documents relate to the proposed new CAP 725 Airspace Change Process, which is expected to be introduced by the CAA in early 2018. . However, as the LBHA Airspace Change Proposal has been notified to, and co-ordinated with, the CAA under the current (2014) edition of CAP 725 the CAA has confirmed that it will be considered by them using the current (2014) process. It is not anticipated that LBHA will be required to implement any of the emerging processes and procedures arising from the latest documentation, but will take guidance from the CAA in this regard.*

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1. Introduction

- 1.1. This is the **Report of the Supplementary Consultation** carried out by London Biggin Hill Airport (LBHA) about a proposal to introduce an Instrument Approach Procedure to Runway 03 at LBHA.
- 1.2. The introduction of an IAP will enable all-weather operations to be conducted safely and efficiently when weather conditions dictate that Runway 03 is in use and reflects the enhanced navigation capabilities of the generation of business aircraft currently operating at LBHA. The introduction of the proposed IAP is in accord with the CAA's Future Airspace Strategy (FAS) and Policy for the Implementation of Performance-Based Navigation (PBN) in UK Airspace.
- 1.3. The **Supplementary Consultation** was necessary because of changes which were made to the original procedure design following the initial **Sponsor Consultation** carried out by LBHA between 18 November 2015 and 26 February 2016. The changes to the procedure design were necessary primarily to resolve operational interactions between the proposed procedure and other extant Instrument Flight Procedures from adjacent Airports in the London Terminal Control Area (LTMA) but also to revisit some environmental concerns identified in responses to the **Sponsor Consultation**.
- 1.4. The **Supplementary Consultation** was carried out between **27 February and 10 April 2017**, a consultation period of 6 weeks specified by the Civil Aviation Authority (CAA).
- 1.5. The list of consultees, again subject to agreement and approval by the CAA, comprised those aviation and community stakeholders that might be affected by the changes to the proposed IAP configuration. The CAA considered that it would not be necessary to re-consult with those communities where no change to the proposed procedure had been made. The full list of 136 consultee stakeholders was given in the **Supplementary Consultation Document**. However, as with all consultations of this nature, responses from other aviation organisations, community organisations or members of the public were welcome and have been taken into account in this Report.
- 1.6. A total of 97 responses to this **Supplementary Consultation** were received by LBHA. Nineteen were from the listed consultees and 78 were from other organisations or individuals. The breakdown and statistical analysis of the responses is given in **Section 2** below. An analysis of the response support level is given in **Section 3** and identification of the key themes arising from the Consultation is given in **Section 4** and amplified in **Annex A**.



- 1.7. Finally, in **Section 5**, we identify further procedure development activity that is currently in hand or will need to be carried out and **Section 6** gives our conclusions on carrying the proposal forward to the CAA and how that is to be done.
- 1.8. LBHA extends its thanks to all who took the time to respond to this **Supplementary Consultation**.

2. Statistical Analysis

- 2.1. A total of 136 consultation invitations were distributed by e-mail or by post to those consultees listed in **Annex A of the Supplementary Consultation Document** and are detailed in **Figure 1** below. By agreement with the CAA, the formal list of consultees was limited to those aviation and community stakeholders who may be affected by the changes to the proposed IAP that had been made following the earlier Sponsor Consultation.
- 2.2. In addition, local media was informed of the **Supplementary Consultation** and carried news items in the local press so that other aviation or community organisations or individuals who felt they were stakeholders could be aware of, and respond to, the **Supplementary Consultation**.

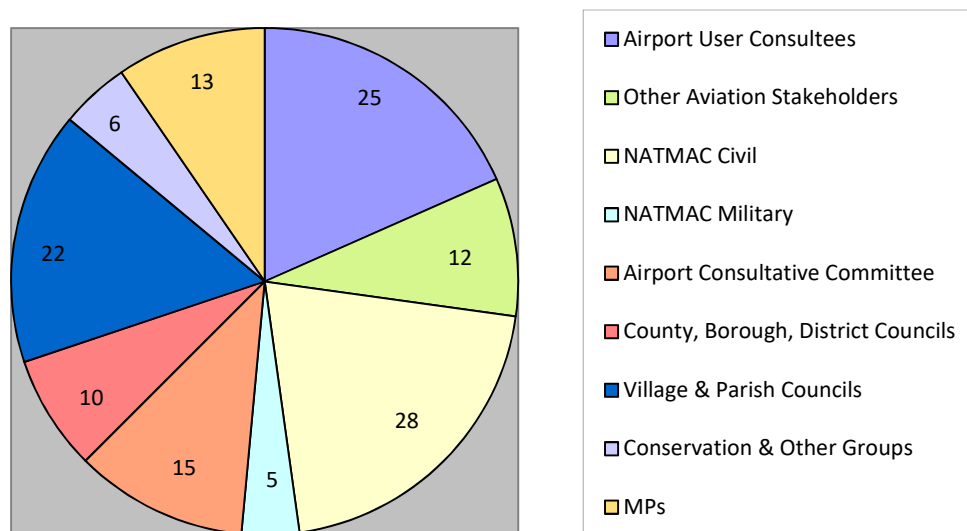


Figure 1: Distribution of Consultees

Note: NATMAC is the CAA's National Air Traffic Management Advisory Committee, comprising the National Bodies of aviation organisations.

- 2.3. The **Supplementary Consultation Document** was distributed via a dedicated link on the LBHA website in accordance with acceptable consultation practice specified by the CAA. Hard-copy of the documentation was available on request; none was requested.
- 2.4. A total of 19 responses were received from aviation and non-aviation stakeholders on the consultee stakeholder list. This is a response rate of 14.0%. Whilst this is a disappointing response rate, particularly from the locally-based aviation

stakeholders, sufficient input was received from those representing the General Aviation (GA) airspace user community, ATM interests and members of the public to form a view. A breakdown of the stakeholder responses to the Consultation is given in **Figure 2** and **Table 1** below.

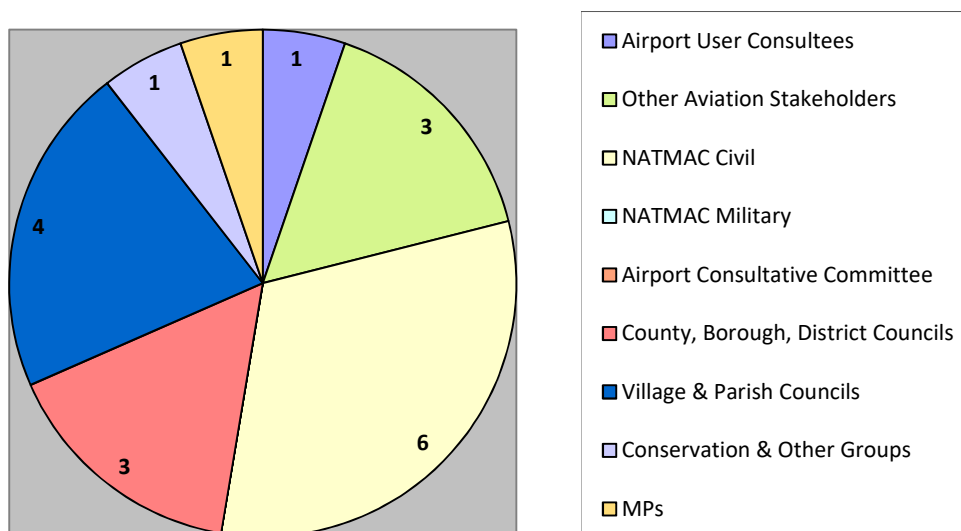


Figure 2: Distribution of Responses

	Listed Consultee Groups	Number consulted	Responses	%
1.	Airport User Consultees	25	1	4
2.	Other Aviation Stakeholders	12	3	25
3.	NATMAC Civil	28	6	21.4
4.	NATMAC Military	5	0	0
5.	Airport Consultative Committee	15	0	0
6.	County, Borough, District Councils	10	3	30
7.	Village & Parish Councils	22	4	18.2
8.	Conservation & Other Groups	6	1	16.6
9.	Members of Parliament	13	1	7.7
	Totals	136	19	14.0

Table 1: Responses from Consultee Groups

- 2.5. A further 78 responses were received from other aviation or community stakeholders or individuals, comprising 40 that could be positively identified as from the aviation community and 34 that could be positively identified as being from community organisations or individuals. (The remaining 4 responses could not be positively identified as aviation or community but, from the nature of the responses, were most likely aviation-related individuals.)
- 2.6. All responses received, whether from the listed consultees or from others, have been taken into account in this Report. However, a number of consultees raised issues which were not pertinent to this specific consultation which was only about the introduction of an IAP to Runway 03 (as noted in both the original **Sponsor Consultation** and the **Supplementary Consultation Documents**). In particular, one community-based website posted incorrect information that the proposal included a new departure route. This led to some responses challenging the departure procedures. (LBHA subsequently wrote to the website sponsors to correct their misunderstanding.) These comments have been noted by LBHA but have not been addressed in this **Report**.

3. Analysis of Responses

- 3.1. Responses were received from 19 (14.0%) of the consultee stakeholder organisations. A further 78 responses were received from other members of the public or the aviation community or from community representative organisations (e.g. Conservation Societies).
- 3.2. Of the 10 aviation consultee stakeholder responses: 5 supported, gave qualified support, or had no objections to the revised IAP; 2 did not support it; 2 objected to the proposal; and 1 sought a more detailed analysis beyond that provided in the consultation document.
- 3.3. Of the 9 non-aviation consultee responses: 2 had no objection to the proposal; 2 did not support it; 1 objected; and 2 stated that they did not wish to make any specific comment. Two organisations were non-committal and sought a more detailed analysis beyond that provided in the consultation document.
- 3.4. In addition to responses from the listed consultee stakeholder organisations, responses from members of the public or other representative organisations were sought and welcomed. In total 78 additional responses were received from members of the aviation community and other members of the public. These could be positively identified as 40 from the aviation community (i.e. who identified themselves as pilots or aviation organisations) and 34 that could be positively identified as individuals or organisations from the community. The remaining 4 responses could not be positively identified as aviation or community but, from the nature of the responses, were most likely aviation-related individuals.
- 3.5. Of the responses from members of the aviation community (including the 4 presumed to be aviation related), 6 supported or gave qualified support to the proposal whilst 38 did not support or objected to the proposal. The majority of objections were related to the introduction of an IAP in the narrow corridor of Class G airspace between the Gatwick Control Area (CTA) and the Biggin Aerodrome Traffic Zone (ATZ) (see **Section 4**).
- 3.6. Of the responses from community stakeholders, 2 supported or had no objection to the proposal whilst 30 did not support or objected to the proposal. The majority of objections were related to the revised configuration and height of the procedure where it turns towards the final approach track in the vicinity of the south side of Woldingham (see **Section 4**).

- 3.7. Where respondents sought additional analysis of the impact of certain aspects of the proposed IAP, advice has been sought from the CAA to ensure that a balanced and informed reply can be delivered by LBHA. Where appropriate, individual responses are being developed by LBHA.
- 3.8. Some responses included information not pertinent to this Consultation, for example comments about departure procedures and the noise nuisance of certain types of aircraft. This Consultation is solely about the proposal to introduce an IAP to Runway 03 and does not include any departure procedures. It was brought to the attention of LBHA that a community organisation had posted inaccurate information about the Consultation that inferred that it included a new departure route. LBHA wrote to the website sponsors to correct this misunderstanding. (The website sponsors were a listed consultee organisation but did not respond to the consultation.) No changes are planned to departure procedures at LBHA.

4. Key Themes Arising from the Responses

- 4.1. In analysing the responses from the listed stakeholder consultees and others, LBHA has identified the key themes and issues that emerged in the responses from those that did not support or who objected to the proposal. A detailed breakdown of the themes and the LBHA consideration of them is given in **Annex A of this Report**.
- 4.2. The procedure design rationale for the reconfiguration of the proposed IAP was explained in the **Supplementary Consultation Document**.
- 4.3. From the aviation perspective, it was clear that the primary concern of the GA airspace user community was the re-positioning and reduced altitude of the Initial and Intermediate Segments of the IAP to place them below controlled airspace and on an alignment coincident with the M25. The Motorway is widely used by GA VFR pilots as a visual navigational line feature as a means for avoiding penetration of the Gatwick CTA and Redhill ATZ to the south and the Biggin ATZ to the north. Furthermore, the two M25 junctions close to the reconfigured IAP are co-incident with Visual Reference Points (VRPs) notified for entry/exit procedures for the Redhill Local Flying Area (LFA) and ATZ. There was concern that inadequate traffic analysis of the use of the corridor by VFR flights had been carried out, and that consideration of risk had been inadequate.
- 4.4. A more detailed breakdown and response to specific aspects of these objections from aviation community members is given in **Annex A**.
- 4.5. From the community perspective, the majority of objections to the reconfigured IAP came from residents of Woldingham, and in particular from The Ridge on the southern edge of Woldingham. The respondents objected that the nominal track of the reconfigured IAP now overflew their community and at too low a height over the high ground of The Ridge.
- 4.6. There was support for some aspects of the reconfiguration of the proposed procedure in so far as the alignment was now along or north of the M25 and away from Bletchingley and Nutfield.
- 4.7. A more detailed response to specific aspects of these and other community objections is given in **Annex A**.

5. Enablers to the Introduction of the Proposed IAP

5.1. Overview

- 5.1.1. As with any proposal to introduce a new IAP at an airport, development of the procedure design itself and the airspace change consultation process are only two aspects of many activities that must take place before the IAP can be approved by the CAA for implementation and use. Some of the co-incident activities which affected the changes to the proposed procedure design were detailed in the **Supplementary Consultation Document**.
- 5.1.2. In **this Section** we outline some of the other activities that are taking place alongside the procedure design and the consultations that have been carried out. Some aspects are as a consequence of the responses to the Initial and Supplementary consultations and others are independent of them. These enabling activities are external to the CAP725 consultation process and are included for information purposes only; albeit that some elements have been referenced in responses to the Consultation detailed in **Annex A**.

5.2. Runway Infrastructure

- 5.2.1. Currently, Runway 03 has no IAP serving it and is, therefore, designated and licensed as a Visual Runway. In order to introduce the proposed IAP the runway infrastructure, including the immediate obstacle environment (cleared and graded area) must be upgraded and additional airfield ground lighting installed. When the IAP is actually introduced the painted runway markings will also be altered to reflect Instrument Runway status.
- 5.2.2. Work is in hand to introduce the necessary changes so that the runway will meet the CAAs licencing requirements (CAP168) for an Instrument Runway.

5.3. Aerodrome Traffic Monitor

- 5.3.1. LBHA ATC is not equipped with radar. It provides a Procedural Approach Control Service (APC) and Aerodrome Control Service (ADC or TWR). However, to assist the controllers in spatial awareness of the surrounding traffic situation LBHA ATC is equipped with an Aerodrome Traffic Monitor (ATM). This provides a radar-derived 'air picture' of the local area using NATS onward-routed radar data (provided under contract by NATS). The use and operation of the ATM is detailed in the Manual of Air Traffic Services (MATS) Part 1 and it must not be used to provide radar services. No radar rating is required for its use by TWR controllers.

5.3.2. LBHA is making application to CAA SRG ATS Regulation to permit advanced use of the ATM by LBHA ATC controllers in order that meaningful traffic information can be passed to aircraft carrying out an IAP or to transiting VFR flights in proximity to the IAP and to assist in the sharing of traffic information with Redhill ATC. Once approval is given by the CAA the LBHA controllers will require specific training in the advanced use procedures.

5.3.3. Advanced use of the ATM is considered an essential enabler for the proposed IAP.

5.4. Integration with Heathrow Detling SID procedures

5.4.1. Notwithstanding the discussions between LBHA, HAL and NATS, and the study commissioned by LBHA which demonstrated that Heathrow departing aircraft are routinely exceeding the minimum climb performance necessary to establish deconfliction by procedure design, HAL has stated that they are unwilling to publish the necessary modification of the DET SIDs at this time and so are unable to support the proposed IAP. HAL is proposing to conduct its own Operational Trial of changes that they propose to the DET SIDs and the results of these Trials will not be known until 2019.

5.4.2. Equally, having made substantial investment in the development of the proposed IAP to meet its customer needs, LBHA is reluctant to defer implementation of the IAP until post-2019.

5.4.3. Therefore LBHA will discuss with CAA, NATS and HAL the possibility of an interim solution of the technical conflict pending the implementation of the deconfliction of procedures by procedure design.

5.5. Letters of Agreement

5.5.1. A Letter of Agreement (LoA) is under development with Redhill Aerodrome to ensure the timely inter-Unit co-ordination of traffic when the Runway 03 IAP is in use so that appropriate traffic information can be passed to aircraft in communication with both ATC Units.

5.5.2. Discussions are to take place between LBHA and NATS LARS Unit at Farnborough to determine whether specific inter-Unit co-ordination or traffic notification needs to take place when Runway 03 and the proposed IAP are in use. If necessary a LoA will be developed.

- 5.5.3. LBHA plans to meet with the operators of Kenley Aerodrome to discuss the proposed IAP and determine whether any inter-Aerodrome co-ordination arrangements or LoA needs to be developed.

5.6. Provision of ATS by NATS

- 5.6.1. NATS currently provides, under contract, a radar ATS to aircraft inbound to LBHA from the LTMA, comprising radar vectoring to the Runway 21 Approach and appropriate traffic information before control of arriving aircraft is transferred to LBHA APC.
- 5.6.2. LBHA is currently in discussion with NATS for development of the contracted radar service to include service to aircraft inbound via the Runway 03 IAP whilst they are within the LTMA airspace. The associated LoA with Thames Radar will be amended to reflect the revised contractual arrangements once discussions are complete.

5.7. Flight Validation

- 5.7.1. An essential element of the regulatory process for RNAV IAP design is flight procedure validation. This normally requires the use of flight simulators for representative aircraft types using navigation database coding for the procedure and flown under differing simulated aircraft weights and a variety of simulated weather conditions.
- 5.7.2. Once the final procedure design configuration and coding is established flight simulation will take place in accordance with the CAA's CAP785 requirement for Validation of procedure design. A Validation Plan has already been established and accepted as satisfactory by the CAA.

6. Conclusions and What Happens Next

- 6.1. The low response level to the **Supplementary Consultation** from the listed consultees was disappointing to LBHA. However, a healthy response level from other members of the aviation community and members of the public was reassuring and enabled LBHA to form a view on the reconfiguration of the proposed IAP.
- 6.2. LBHA responses to the themes and issues of concern identified are given in **Annex A** of this Report.
- 6.3. Whilst there are still several matters to be concluded, including those enabling activities outlined in **Section 5** above, LBHA remains committed to the introduction of an RNAV IAP to Runway 03. When introduced, it will provide an improved all-weather operating capability to meet the increasing demand from its customer operators.
- 6.4. LBHA will continue, therefore, with the development of the full ACP for submission to the CAA in accordance with the requirements of CAP725. We expect to be in a position to submit the ACP in early-summer 2017, subject to satisfactory progression of the actions outlined in **Section 5** above and as indicated in **Annex A**. The proposed IAP design must also be submitted to the CAA's CAP785 regulatory process, which will run in parallel with the scrutiny of the ACP itself.
- 6.5. Following submission of the ACP to the CAA, the proposal will then enter the CAA's internal process for their consideration of all aspects of the proposal. A Regulatory Decision would be expected some 16 weeks after submission and then implementation of the IAP some 2-3 months after that. (No specific target dates are quoted here as the Process is dependent on satisfactory resolution of the outstanding operational issues detailed in **Section 5** above.) Thus, we would anticipate introduction of the IAP to be Autumn/Winter 2017/2018 or early-Spring 2018 if all goes smoothly.
- 6.6. Once again, LBHA extends its thanks to all who have taken part in both the Initial and the Supplementary Consultations. You can be assured that we have taken your views into account, together with those of our customers, in the development of an all-weather operating capability to Runway 03 at LBHA.

A. Themes and issues of concern arising from the Supplementary Consultation

	Issue	LBHA Comment
1.	<u>Interaction with Heathrow SIDs via DET (HAL)</u> HAL is developing an operational trial to take place in 2018 (with results expected in 2019) to test the operational and environmental impact of changes to the DET SIDs which will include the change necessary to ensure procedural separation from the Biggin IAP. Until the results of the trial are known HAL cannot introduce changes to the DET SIDs and therefore cannot support the Biggin proposal at this time.	LBHA understands the sensitivities of introducing any changes to Heathrow procedures at this time. LBHA commissioned an extensive study into the Heathrow Runway 09 DET SIDs, the results of which demonstrate that aircraft are already exceeding the necessary minimum climb performance required and thus no adverse operational or environmental impact would result. Having already made a considerable investment in the development of the proposed IAP to facilitate an increasing demand for all-weather operations to Runway 03, LBHA is reluctant to defer implementation of the IAP until post-2019, awaiting the outcome of the HAL trials. LBHA will therefore discuss with NATS, HAL and the CAA a possible interim solution which would facilitate the introduction of the proposed IAP whilst awaiting the procedural solution.
2.	<u>Redhill Aerodrome</u> Lack of discussion on a Letter of Agreement (LoA) with Redhill. Company-specific IFR let-down procedures to Redhill may be affected. Concerns about flight safety in the area.	The Redhill representative raised no objections to the proposed reconfigured IAP at the HAZID Meeting held on 28 September 2016 and did not identify the perceived risks now raised. Furthermore, no mention has previously been made of unpublished 'IFR Company-specific let-down procedures' and these are unknown to LBHA ATC. LBHA is developing a Draft LoA to facilitate the exchange of pertinent traffic information between LBHA and Redhill ATC. (The advanced use of the Aerodrome Traffic Monitor by Biggin ATC will contribute to the passing of pertinent traffic information.)

	Issue	LBHA Comment
3.	<u>Mix of VFR and IFR flights in a very narrow corridor</u> Most aviation respondents and some community respondents were concerned about the introduction of an IAP for IFR flights inbound to LBHA in a very narrow corridor of Class G airspace highly utilised by transiting and Redhill-bound VFR flights. Salient comments included: No documented traffic assessment of VFR traffic using this airspace and no risk assessment of the IFR/VFR traffic mix carried out – traffic data should be obtained and a risk assessment documented; M25 is used as a navigation line-feature for avoidance of the Gatwick CTA, Redhill ATZ and Biggin ATZ - IAP is also aligned over the M25; Redhill traffic routinely routes via and holds at the notified VRPs - IAP also overflies the VRPs; Pilots of large IFR aircraft are unlikely to keep a lookout for small VFR aircraft in their proximity; Concern about IFR flight response to TCAS RA entering CAS; Perceived as unsafe for VFR and IFR flights to operate in the same corridor;	The introduction of an IAP to operate in Class G airspace is not unique and such airspace arrangements exist in the vicinity of other UK airports supporting business and executive aircraft in equally well-frequented uncontrolled airspace; for example, Farnborough, Cranfield, Cambridge and Oxford Kidlington. In the light of comments from FASVIG and LAA, LBHA has discussed risk assessment with the CAA and they have advised that there is no recognised or meaningful methodology for doing this in Class G airspace. However, following comment from FASVIG and LAA, LBHA will contact FASVIG to discuss the results of any risk assessment these organisations might wish to carry out using their TRAX International modelling tool. Good airmanship, by pilots of both transiting VFR flights and IFR flights using the IAP, will ensure awareness of each other's potential activity. Depiction of an IAP "arrow" to runway 03 on the CAA ¼ million and ½ million charts will alert pilots of VFR flights to the existence of an IAP and the prevailing weather conditions (wind direction) will alert pilots of its potential of being in use at the time. If necessary, pilots of transiting VFR flights can contact Biggin ATC for traffic information. All aircraft operations in Class G airspace rely on good airmanship by all. The proposed LoA between LBHA and Redhill ATC, together with the enhanced use of the Aerodrome Traffic Monitor by LBHA ATC will facilitate the passing of meaningful traffic information between the two units and to aircraft operating in the area. This LoA is under development. Flight paths of IFR procedures inside CAS have "Primary Area" containment inside the boundary and 500ft vertical containment. The proposed IAP flight path is outside the lateral CAS boundary of the Gatwick CTA by at least the Primary Area. It is considered unlikely that pilot reaction to a TCAS RA against Class G traffic would result in a second RA against CAS traffic.

	Issue	LBHA Comment
	<u>Mix of VFR and IFR (cont)</u> Aircraft in the area may be communicating with a number of ATS agencies, or none. No depiction of Redhill or M25 on IAP Charts as submitted.	A LoA with Farnborough LARS Unit will be developed which will enhance the passing of meaningful traffic information between these Units and the passing of traffic information to aircraft under the jurisdiction of both Units. Aircraft carrying out the IAP to Runway 03 will carry the Biggin Conspicuity Code which will be identifiable by Farnborough LARS. The Draft IAP Chart submitted in the Supplementary Consultation Document was depicted in accordance with the ICAO Annex 4 Standards used by the CAA for IAP Charts in the UK AIP. LBHA will investigate with the CAA the additional (non-standard) depiction of Redhill and Biggin ATZs and other geographical features on the Chart to enhance pilot awareness.
4	<u>IAP should have restricted availability (LAA)</u> IAP should only be available when weather conditions are such that the cloud ceiling is below the height of the IAP at the ATZ boundary. The IAP aircraft would still be in cloud at the ATZ boundary and thus would not encounter unknown VFR flights. At other times the Visual Manoeuvring (Circling) Approach should be used.	The LAA proposal suggests that the IAP to Runway 03 should only be available when the cloud ceiling is less than 740ft aal (the approximate height of an aircraft at 2NM from touchdown on a 3.5° (6.12%) descent path. Given that the OCH for the proposed IAP is 443ft aal (1020ft ALT) this would allow only a less than 300ft spread of cloud ceiling for procedure availability. Conversely, the VM(C) OCH for circling from an approach to Runway 21 is 851ft aal for Cat C aircraft and 751ft aal for Cat B aircraft, which would thus render the IAP unavailable to these aircraft if the LAA suggestion was adopted. Consequently, this suggestion appears unviable. It should be noted that Runway 03 is only in use for less than 30% of the time.

	Issue	LBHA Comment
5	<u>Potential increase in gliding activity at Kenley (BGA)</u> Air Cadet activity at Kenley expected to resume in the near future. No consideration of Kenley operations in the Supplementary Consultation Document.	An increase in activity at Kenley was not known to or anticipated by LBHA. Kenley Aerodrome (as Consultees) did not respond to either consultation. LBHA will investigate with MoD their plans for Air Cadet operations at Kenley. (MoD did not respond to the Supplementary Consultation.) However, the proposed IAP is within controlled airspace at 3000ft amsl whilst in the vicinity of Kenley and only descends below controlled airspace when clear of the area in which gliding activity takes place. Unless Kenley plans to operate further away from their aerodrome then there should be no conflict of operation with the IAP. LBHA will contact Kenley to determine what action, if any, needs to be taken. <u>Post-Consultation Note:</u> In the light of BGA comments LBHA has, with the assistance of our CAA SARG Case Officer) received input from MoD DAATS. Whilst the proposed IAP, where it is at 3000ft ALT within the LTMA in the vicinity of Kenley, it is noted that gliding operations sometimes take place to the south as far as the M25. Consequently, LBHA will arrange to meet with the military and civil gliding operators at Kenley to determine whether any formal arrangements (e.g. LoA) need to be established for the timely exchange of pertinent traffic information when the Runway 03 IAP is in use.
6	<u>Green Dragon Flying Club, Woldingham (BHPA)</u> No contact with microlight and hang-gliding club by LBHA in spite of requests. Increased risk to microlight and hang-gliding operations.	The Green Dragon site lies outside the Biggin ATZ to the west and is approximately 1NM from the nominal flight path of the proposed IAP and clear of the Runway 03 final approach path. No formal arrangements exist between the Club and LBHA ATC. LBHA will contact the CFI to discuss the proposed IAP operation and determine whether a LoA is necessary.
7	<u>Procedure access</u> Waypoint ARR04 should be designated as the Initial Approach Fix (IAF) to allow access to the procedure from routes to the west other than via ALKIN.	The IAP is intended only for use by aircraft inbound to LBHA from the Airways Network and the LTMA. It is not available to non-Airways arrivals below the LTMA.

	Issue	LBHA Comment
8	<u>Consider an LNAV+V procedure</u> (PPL/IR) Downgrading the proposed IAP from LPV¹ to LNAV-only negates the benefits of vertical guidance on an IAP. Consideration should be given to designating the IAP as “LNAV+V” to give the benefits of an advisory glidepath. This would most likely improve safety and possibly reduce the noise footprint.	PPL/IR is correct in noting that the redesign of the IPA from LPV (LNAV/VNAV) Precision Approach to LNAV-only Non-Precision Approach was necessary to remove the procedure from the Gatwick CTA. The PANS-OPS procedure design criteria for LPV required penetration of the CTA, whereas the different design criteria for LNAV-only allow for a design which remains outside the CTA. We have investigated the term “LNAV+V”, which is not a PANS-OPS procedure design nomenclature or application. It appears that the “+V” advisory glidepath is a factor of some individual navigation installations rather than of the procedure design. Thus, some navigation equipment will apply (internally) a “+V” element to the navigation display and some will not. The advisory vertical guidance is normally based on a 3° descent path, whereas the proposed IAP has a 3.5° descent path. The pilot, at all times, would remain responsible for adhering to the LNAV IAP step-down altitudes and obstacle clearance. Thus, the appropriate design, designation and operating minima for the proposed IAP is LNAV in accordance with the PANS-OPS nomenclature and criteria.

¹ LPV: Localiser Performance with Vertical Guidance. The highest GNSS IAP available without specialised aircrew training and Required Navigation Performance (RNP).

	Issue	LBHA Comment
9	<u>Other outstanding aviation aspects (NATS)</u> Notes the potential mandatory extended routing for aircraft approaching from directions other than OSVEV/ALKIN. Suggest addition of “Direct Routing” waypoints along the procedure where these would allow more efficient use of the airspace. NATS would wish to discuss this aspect further with LBHA; Need assurance that the lateral and vertical accuracy of the LNAV-only proposal would not result in an increased potential for inadvertent controlled airspace (CAS) penetration; Recommend progressive review of the operation of the IAP to ensure that the assumptions made in the respective safety cases has been met; Should any safety events occur then the use of the procedure should be suspended pending full investigation; Draft LoA between LBHA and NATS Swanwick not yet finalised; New or revised ATS co-ordination procedures between LBHA and NATS Farnborough for ATS provision outside controlled airspace to be discussed; Consider that advanced use of the ATM by LBHA ATC would be essential.	LBHA will investigate with its procedure designers the possibility of re-designating the segments of the proposed procedure along the lines of a Transition so that “Direct To” instructions might be issued by TC Controllers as they are for LCY transition procedures. LBHA considers that the proposed LNAV IAP and specified vertical profile is adequately separated from CAS and should not be considered as being any different to other IAPs which lie below or closely adjacent to controlled airspace. All IFPs established in CAS include “primary area” containment plus 500ft vertical containment against the boundary/base; the proposed IAP lies outside the lateral boundary of the Gatwick CTA and is at least 300ft below any in-CAS flights. Agree that on-going monitoring of the IAP should be carried out. Irrespective of whether CAA specifies it as a post-implementation requirement, LBHA will monitor the use of the IAP, including regular reviews with NATS on this aspect. LBHA will seek, within the revised LoA with NATS Swanwick, the assistance of NATS in the provision of NATS radar recordings for analysis. LoA with NATS is under development and drafting is to be agreed before submission of the ACP to CAA. Review of inter-unit co-ordination procedures with NATS Farnborough is in hand and if necessary a LoA will be developed and agreed before submission of the ACP to CAA. Agree advanced use of ATM is essential. Discussions are under way with CAA/SARG ATM Regulation.

	Issue	LBHA Comment
10	<u>Woldingham (including The Ridge)</u> (Tandridge DC, Woldingham Assn Ltd, and others) Support for changes made regarding Bletchingley and Nutfield; but concern that reconfigured proposal is more detrimental to Woldingham and Caterham. Woldingham is the area most affected by the changes to the proposed IAP – the environmental considerations listed do not take Woldingham into account; Woldingham has higher population count than Tandridge and Bletchingley - overflight of Woldingham, particularly The Ridge, will be much lower than the previous configuration overflew Bletchingley and Tandridge; No noise evaluation of larger aircraft (A320, B757) currently using LBHA or the more noisy turboprops (ATR72, Dash 8) - therefore challenge noise exposure figures quoted; Aircraft will be only 886ft above terrain when overflying The Ridge and nearby residences; Aircraft configuration at this stage of the approach will require higher thrust settings (more noise) and changes to thrust settings;	LBHA acknowledges that the reconfigured procedure nominal flight path lies above the higher ground of “The Ridge” rather than further south over the M25 itself. Whilst not ideal, this was to ensure that the “Primary Area” of the IAP did not overly the boundary of the Gatwick CTA, a regulatory requirement. LBHA has instructed its Procedure Design specialists to review this aspect of the design to see if the nominal flight path can be moved further to the south without compromising the Gatwick operation (or by developing a suitable mitigation as necessary). Our consultants are confident that this can be achieved, subject to approval by the CAA. None of the aircraft types listed by the respondent operated at LBHA in 2016. However a small number (less than 30 over the year) of Boeing BBJ (B737-based) and RJ70 aircraft operated LBHA has recently noted that some aircraft carrying out the Visual Manoeuvring (Circling) Approach to Runway 03 are extending their circuit as far as 4NM from the aerodrome. There is no specified height for flying the Circling Approach once the pilot has established the necessary visual references; positioning of the aircraft and avoidance of terrain/obstacles is done visually. It is possible that aircraft carrying out the current Circling Approach may be lower than for future use of the IAP.

	Issue	LBHA Comment
11	<u>Woldingham (cont.)</u> Will add to the existing noise pollution from the M25; Not enough consideration of CO₂ emissions; Would affect tranquillity of the village; The revised procedure configuration is not one of those suggested from the previous consultation; Low flying light aircraft are an ongoing concern, the addition of commercial scheduled jet aircraft changes the degree of environmental concern; Traffic figures supplied indicate an increase of 22% year-on-year for use of Runway 03;	The Supplementary Consultation document detailed how and why each of the configurations suggested by the previous consultation could not be adopted. This Consultation is not about the introduction of commercial scheduled services at LBHA and there are no plans to introduce such services. The proposed IAP, whilst available to all suitably-equipped airport users operating under IFR when Runway 03 is in use, the primary aim is to provide a better all-weather operating capability for existing Corporate and Business aircraft operators using the airport. (The procedure is only applicable to aircraft inbound to LBHA via the LTMA.) The use of Runway 03 is dependent on the prevailing wind. The meteorological evidence indicates that Runway 03 would be used approximately 30% of the time each year.

	Issue	LBHA Comment
12	<u>Bromley & Orpington</u> Proposal deceives Bromley residents; Potential harm to Princess Royal University Hospital (PRUH) – deafening noise - take-off route unacceptable; Recommends Bromley Council (LBB) sets up Inquiry. Proposal changes flight paths over Orpington and appears to be in breach of terms of lease with LBB Council	LBHA has examined the proposed IAP with respect to PRUH. The Missed Approach Procedure (MAP) for Runway 03 passes close to, but not over the PRUH and does overfly parts of Crofton and Orpington. However, the MAP, which is an integral and mandatory element of IAP design, is seldom used in practice. It would only be used when an aircraft, having commenced an Instrument Approach to Runway 03 is unable to complete a landing at the end of it (for example if the runway becomes blocked or the weather deteriorates below the pilots landing minima). This is likely to occur no more than one or two times a year, if that, given that runway 03 is only required for approximately 30% of the time and the rate of usage of the proposed IAP is low. The slight difference between the MAP flight path of the original (LNAV/VNAV SBAS) proposed IAP (blue line) and that for the reconfigured LNAV IAP (red line) is due to the fact that the Missed Approach Point (the position at which the design construction of the MAP originates) for the latter Non-Precision Approach is different to that for the former (Precision Approach). This is a factor of the ICAO PANS-OPS procedure design criteria over which the Procedure Design specialists have no influence. LBHA emphasises again that no changes are proposed to the existing departure procedures from LBHA which follow a different flight path.

	Issue	LBHA Comment
13	<u>Reigate & Banstead</u> Concerns about the rigour of the environmental assessment with respect to CAP725 methodology; Inadequate forecasting of future movements on the proposed IAP; New IAP will increase fuel burn and CO₂ by 30 – 50% - at odds with statement that it will be neutral; No data showing CO₂ analysis for current operation, IAP operation and 5-year forecast - contrary to CAP725 requirements; No quantitative assessment of environmental and financial costs of the proposal against the perceived benefits - no conclusion that it is “better” can be reached; No indication of what monitoring will be in place pre- and post- implementation - baseline needs to be established so that implementation impacts can be assessed; No indication of where monitoring will be sited; No indication that alternatives will be considered if post-implementation impacts are unacceptable, or a trigger for consideration of such impacts;	LBHA believes that it has fully complied with the CAP725 requirements for environmental assessment. We have covered issues including, inter alia, alternative procedure design options, noise evaluation, emissions, visual intrusion and tranquillity and have employed specialist consultants (Bickerdike Allen Partners (BAP) and the CAAs Environmental Research and Consultancy Department (ERCD)) to provide quantitative analysis where required. The CAA will determine, in its evaluation of the Airspace Change proposal (ACP) itself, whether the LBHA assessment is adequate or whether they require further work to be carried out. As noted in the Report of the Initial Sponsor Consultation, it is very difficult to put specific numbers to the predicted growth in Corporate and Business aircraft movements in a challenging market. This is reflected in the Airport’s Noise Action Plan (NAP) and was stated in the initial Sponsor Consultation Document. The Supplementary Consultation was only about <u>changes</u> to the IAP configuration as previously submitted to consultation. It was not about the basic principle of introducing an IAP. The availability of an IAP to runway 03 makes the runway available for landing (on those occasions when the wind direction requires its use) in weather conditions worse than the current minima allows. This will alleviate the fuel burn and emissions cost together with the operating costs and commercial inconvenience to Airport users and their customers of diversion to other airports. As noted above, the Supplementary Consultation was only about the <u>changes</u> that have been made to the proposed IAP configuration. The CAA will specify what post-implementation monitoring they will require LBHA to carry out to inform the Post Implementation Review (PIR) which will be carried out 1 year after implementation. The CAA will then determine whether or not the objectives of the IAP have been met and, if not, what further action they will require of LBHA (which might include withdrawal of the procedure). Under the current CAA PIR methodology external organisations may be invited to provide input to the PIR.

	Issue	LBHA Comment
14	<u>Reigate & Banstead (cont.)</u> No definition of “significant noise problem”; No recognition of compensation payments to residents who have bought properties in areas not overflown. - New Government guidance encourages airports to consider compensation, even if outside the eligible average noise contours.	There is no recognised definition of “significant noise problem” but the extant CAA and Government metrics for the onset of community annoyance are well known and well documented. (Recent CAA work on community attitudes to aircraft noise can be found on the CAA website but, as yet, no changes have been made to the CAA or Government metrics.) However, as noted above, the Supplementary Consultation was about the <u>changes</u> that have been made to the configuration of the proposed IAP and included appropriate environmental assessment of those changes. Our views on compensation have not changed from those stated in the Report of the initial Sponsor Consultation. The proposed new Government Guidance (which is still at Consultation) only recommends consideration of compensation outside the eligible average noise contours where there is, specifically, “significantly increased overflight”. We would argue that the low percentage of the time that Runway 03 is required to be used and, when it is, the low rate of IFR arriving flights utilising the proposed IAP, coupled with the new CAA documentation defining “overflight”, would not result in “significantly increased overflight” as a consequence of the proposed IAP. However, as noted above, the Supplementary Consultation was about the <u>changes</u> to the configuration of the proposed IAP, not the principles of introducing an IAP.

	Issue	LBHA Comment
15	<u>Other environmental comments</u> (Surrey CC) Welcome change to the IAP configuration south of M25 but there will still be many new Surrey communities frequently overflown under a narrow flight path; Concern about the ability to provide respite and whether any respite measures have been considered; Have any trials of this or alternative routes been undertaken; (Experience of the introduction of RNAV SIDs at Gatwick is cited.)	Given that LBHA is not a “high density” airport operation with a continuous stream of arriving flights, and that Runway 03 is only required to be used for approximately 30% of the time (i.e. when the wind direction is from the north, north-east or east), no communities are likely to be “frequently” overflown by aircraft using the IAP. We expect no more than 10 arriving aircraft in a <u>peak</u> hour to use the procedure (when Runway 03 is required) and natural respite will occur in the significant gaps between flights and much lower utilisation in non-peak hours. It is not an “intensive” operation along the lines of, say, London Gatwick. This level of traffic would be very rare indeed. At present the airport averages around one IFR arrival in each hour. Simulator evaluation of the IAP is required as part of the procedure validation required under CAP785. This will test the design, flyability and ground track of the IAP by representative aircraft types under various adverse weather conditions. If necessary the CAA may require an airborne flight evaluation to be carried out.

	Issue	LBHA Comment
16	<u>About the consultation</u> (various) Do not agree with the CAA's approach that consultation could be limited - everyone should be given the opportunity to comment; Some consultee PCs within Tandridge DC were unaware of the consultation; Complaint that Woldingham Assn Ltd was not a consultee; Document gives the impression that decision has already been made. Why is timescale so quick? Do not believe that all alternatives to resolve the previous design issues have been explored; Consultation period too short. [One consultee was complementary about the consultation material; comprehensive and easy to assimilate.]	The extent and duration of the Supplementary Consultation was discussed with the CAA and we adopted their recommendations. Limited coverage and shorter timescale are standard recommendations where Supplementary Consultations become necessary. Some consultees responded after the stated end of consultation and all responses were accepted and used in the compilation of this report. All consultation notifications were distributed to those addressee focal points used previously. LBHA apologises if these were no longer valid in some circumstances. Notwithstanding, those consultees were able to submit their responses satisfactorily. LBHA will add the Woldingham Association Ltd to its list of consultee organisations for future consultations. The overall timescale for development and implementation of a new IAP is extremely lengthy and the consultation process is only one part of the overall process. The operational requirement for an IAP to serve Runway 03 is considered urgent by our customers. Implementation of the proposed IAP is not a foregone conclusion. It requires the acceptance and approval of the complete ACP by the CAA before implementation can take place. The CAA might reject the proposal or require alterations or further consultation to be carried out after the ACP is submitted. The Supplementary Consultation Document clearly indicated why the alternative options previously considered or suggested by responses to the initial consultation were not viable. The ICAO PANS-OPS procedure design criteria limit the flexibility to apply some environmentally-preferable procedure configurations.

	Issue	LBHA Comment
17	<u>Non-subject comments</u> Some pilots do not adhere to the flight paths - departures from runway 21 turning left before 2NM; Desire to discuss AIP text and operation of departures from runways 03 and 21 and resolve issues before introduction of extended hours; Suggest noisy Piaggio (aircraft type) are banned.	

B. Supplementary Consultation Methodology

- B.1. As a consequence of the modifications to the proposed IAP to Runway 03, it was agreed with the CAA that a Supplementary Consultation should be carried out with those stakeholders who would be directly or indirectly affected by the changes that had been made to the procedure configuration.
- B.2. The CAA considered that a six-week consultation period would be adequate for this Supplementary Consultation. LBHA drew up a list of proposed Consultees, which was agreed by the CAA. The CAA staff had sight of, and were content with, the Supplementary Consultation Document before publication.
- B.3. The Supplementary Consultation was notified to the listed Consultees by e-mail or by letter where no e-mail address was held. The Supplementary Consultation Document was placed on the LBHA website with a link from the site Homepage.
- B.4. In addition, the Supplementary Consultation was notified to the local media outlets in areas affected by the proposal so that interested members of the public or the local aviation community could be made aware of the Supplementary Consultation.
- B.5. Whilst the Supplementary Consultation was targeted at the list of Consultees detailed in the Supplementary Consultation Document, LBHA welcomed responses from other aviation or community organisations or individuals who considered that they might be affected by the introduction of the proposed IAP. All such responses were taken into consideration by LBHA.
- B.6. The Supplementary Consultation ran from 27 February 2017 to 10 April 2017.
- B.7. A dedicated e-mail address acp@bigginhillairport.com was established on which consultees and other stakeholders could submit their responses. The e-mail address could be accessed from the LBHA website consultation page or directly. The option was available for written responses to be submitted from stakeholders unable to respond by e-mail.
- B.8. An automated receipt notification was sent for all responses received by e-mail. The Supplementary Consultation Document stated that individual replies to comments made in responses would not be sent unless it was clear that there had been some misunderstanding of the proposal or where the stakeholder had a Query about the proposal.
- B.9. Throughout the consultation period LBHA monitored and recorded the responses coming in and responded to queries, or provided clarifying responses, as necessary.

- B.10. On completion of the consultation all responses were collated and the common themes and specific issues/concerns raised in the responses were established. LBHA has given careful consideration to all such issues and, in this Report has given its balanced response to those issues. The LBHA response has, naturally, had to take due regard of both the operational and environmental aspects of the proposed IAP configuration together with the immutable aspects of IAP design and the surrounding airspace arrangements in reaching a balanced conclusion.
- B.11. Where appropriate, LBHA is developing individual responsees which will shortly be distributed.