CAA CAP 1616 Options Appraisal Assessment (Phase I Initial)

Title of Airspace Change Proposal:	London Biggin Hill Airport RNAV (GNSS) Rwy 21		
Change Sponsor:	London Biggin Hill Airport (LBHA)		
ACP Project Ref Number:	2019-86		
Case study commencement date:	04/04/2022	**Case study report as at:**	20/05/2022

Account Manager: N/A	**Airspace Regulator (Engagement & Consultation):** [redacted]	**IFP:** [redacted]	**OGC:** N/A
Airspace Regulator [redacted]	**Airspace Regulator (Environmental):** [redacted]	**Airspace Regulator (Economist):** [redacted]	**ATM (Inspector ATS Ops):** [redacted]

Instructions

To aid the SARG project leader's efficient project management, please highlight the "status" cell for each question using one of the four colours to illustrate if it is:

Resolved - GREEN | Not Resolved – AMBER | Not Compliant – RED | Not Applicable - GREY

Guidance

The broad principle of economic impact analysis is **proportionality**; is the level of analysis involved proportionate to the likely impact from that ACP? There are three broad levels of economic analysis; qualitative discussion, quantified through metrics, and monetised in £ terms. The more significant the impact, the greater should be the effort by sponsors to quantify and monetise the impact.

1. Background – Identifying the impact of the shortlist of options (including Do Nothing (DN) / Do Minimum (DM))			Status
1.1	**Are the outcomes of the options' scenarios clearly outlined in the proposal?**		☒ ☐ ☐ ☐
1.1.1	Has the change sponsor produced an Options Appraisal (Phase I - Initial) which sets out how they have moved from the Statement of Need to the airspace change design options? [E12]	Yes, the sponsor has produced the IOA where the options have been developed and assessed against the Design Principles (DPs) and then appraised following CAP1616 requirements. The sponsor describes the criteria used to discount options and a provides a qualitative assessment of the shortlisted options, including an indication of the two preferred options.	☒ ☐ ☐ ☐
1.1.2	Does the list of options include a description of the change proposal?	Yes. The sponsor has developed a comprehensive list of options, including also radical options. The options are assessed against the design principles (Step 2A document) and the viable ones are fully described and assessed (Step 2B document) following CAP1616 requirements, i.e., Table E2 Appendix E.	☒ ☐ ☐ ☐
1.1.3	Has the sponsor stated on what criteria the longlist of options has been assessed?	In Step 2A, the sponsor has stated the criteria used to assess the longlist of options. Options are assessed against the Design Principles (DPs) as follows: • A green box indicates that the Design Principle has been met by the specified option. • An orange box means that the Design Principle has been partially met by the specified option. • A red box indicates that the Design Principle has not been met by the specified option. The sponsor states that *"options have been marked as REJECT only when they have two or more Amber assessments"*. n the IOA, the sponsor does not discount any option, but all the options are carried forward, including those that are not the preferred ones.	☒ ☐ ☐ ☐

1.1.4	Where options have been discounted, does the change sponsor clearly set out why?	Yes, an explanation of why options have been rejected was included.	☒ ☐ ☐ ☐
1.1.5	Has the change sponsor indicated their preferred option in the Options Appraisal (Phase I - Initial)? [E8]	Yes, the sponsor states two preferred options: • Option 2AD - VOR/DME Replication direct from OSVEV (3 Deg) • Option 9 - MAP 'Do Minimum Option'	☒ ☐ ☐ ☐
1.1.6	Does the Initial Options Appraisal (Phase I - Initial) detail what evidence the change sponsor will collect, and how, to fill in any evidence gaps and how this will be used to develop the Options Appraisal (Phase II - Full)?	Yes, the sponsor has provided this information.	☒ ☐ ☐ ☐
1.1.7	Does the plan for evidence gathering cover all reasonable impacts of the change? [E12]	Yes, the information provided covers all the reasonable impacts of the proposed change.	☒ ☐ ☐ ☐

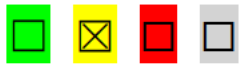
2. Direct impact on air traffic control		Status
2.1	**Are there direct cost impacts on air traffic control / management systems? If so, please provide below details of the factors considered and the level in which this has been analysed.**	☐ ☐ ☐ ☒
2.1.1	*Examples of costs considered (please add costs that have been discussed, and any reasonable costs that the Airspace Regulator (Technical) feels have NOT been addressed)* The Sponsor is not in a position to provide an indication of the costs of extending the use of the BIG VOR, but a formal request has been made to NATS to extend the life of the facility(Para 1.3.1 IOA); this cost is not as a consequence of this ACP, however, this ACP is aiming to address the loss of the DVOR, so any economic benefits of this ACP will be off-set against the maintenance of the BIG DVOR. The Sponsor has also submitted a CAP1781 request to the CAA, which again has not been quantified in terms costs. We would expect an indication of these costs later in the process.	

		Not applicable	Qualitative	Quantified	Monetised
2.1.2	Infrastructure changes		x	N/A	N/A
2.1.3	Deployment		x	N/A	N/A
2.1.4	Training		x	N/A	N/A
2.1.5	Day-to-day operational costs / workload / risks		x	N/A	N/A
2.1.6	Other (provide details)				

2.1.7	**Comments:** The sponsor states that there will be no additional operational, deployment and training costs associated with the proposed change, however it is acknowledged that there might be additional infrastructural costs associated with the continuation of the VOR operation if this will be required.				
2.2	**Are there direct beneficial impacts on air traffic control / management systems?** **If so, please provide details and how they have been addressed:**				☒ ☐ ☐ ☐
2.2.1	*Examples of benefits considered*	Not applicable	Qualitative	Quantified	Monetised
2.2.2	Reduced work-load		x	N/A	N/A
2.2.3	Reduced complexity / risk		x	N/A	N/A
2.2.4	Other (provide details)				
2.2.5	**Comments:** The sponsor clarifies that the proposed airspace change is going to impact a low number of aircraft movements per year (i.e., 60 aircrafts and 30 MAP) and this would improve the resilience of the airport operations and consequently reduce the complexity/risk and workload.				
2.3	**Where monetised, what is the net monetised impact on air traffic control (in net present value) over the project period?** N/A				
2.4	**Are the direct impacts on air traffic management analysed accurately and proportionately?** The Sponsor states that it is 'assumed' that Thames Radar will continue to vector as today's operation. At this stage in the process there is no reason to believe that the vectoring will diminish significantly. The 10 Year forecast provided in the Clarification Document indicates up to 28 aircraft using the procedure in 2034.				☐ ☒ ☐ ☐

3. Changes in air traffic movements / projections					**Status**
3.1	**What is the impact of the ACP on the following and has it been addressed in the ACP proposal?**				☒ ☐ ☐ ☐
		Not applicable	Qualitative	Quantified	Monetised
3.1.1	Number of aircraft movements		x	x	N/A
3.1.2	Type of aircraft movement	x			

3.1.3	Distance travelled	x			
3.1.4	Area flown over / affected		x	N/A	N/A
3.1.5	Other impacts				
3.1.6	**Comments:** The sponsor states that the proposed change is going to impact only 2 aircrafts per month and a total of 30 MAP per year.				
3.2	**Has the forecasting of traffic done reasonably using best available guidance (e.g. DfT WebTAG, the Green Book, Academic sources…etc?)** The sponsor states that *"this ACP aims to change a rarely used inbound procedure which is utilised by approximately 2 aircraft a month, and a Missed Approach Procedure (MAP) that is only used about 30 times a year"*, hence the level of details used is proportionate for the proposed change. The sponsor has provided a 10-year traffic forecast for this ACP; however, it is not clear which year represents the baseline. The sponsor has utilised 2019 in order to determine its CAP2091 category, yet the traffic forecast provided is from 2022. The sponsor is required to clarify/provide the traffic forecast which represents the baseline year.				
3.3	**What is the impact of the above changes (3.1) on the following factors below?** The sponsor has provided a qualitative assessment for all the environmental impacts, which are analysed in a proportionate manner considering the potential number of movements per year that will be impacted. Environmental impacts have been assessed qualitatively within the Initial Options Appraisal; however, there are inconsistencies present between some assessments.				
		Not applicable	Qualitative	Quantified	Monetised
3.3.1	Noise		x	N/A	N/A
3.3.2	Fuel Burn		x	N/A	N/A
3.3.3	CO2 Emissions		x	N/A	N/A
3.3.4	Operational complexities for users of airspace	x			
3.3.5	Number of air passengers / cargo	x			
3.3.6	Flight time savings / Delays	x			
3.3.7	Air Quality		x	N/A	N/A
3.3.8	Tranquillity		x	N/A	N/A

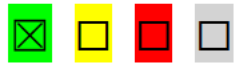
3.4	**Are the traffic forecast and the associated impacts analysed proportionately and accurately according to available guidelines (e.g. WebTAG or the Green Book?)** The level of details provided is proportionate to the potential impact of the ACP and in line with the level of proposed change. The sponsor has provided a 10-year traffic forecast; however, it is not clear which year represents the baseline. The sponsor has utilised 2019 in order to determine its CAP2091 category, yet the traffic forecast provided is from 2022. The sponsor is required to clarify/provide the traffic forecast which represents the baseline year.	

Year	Total Forecasted Movements	IFR Forecasted Movements	VOR Forecasted Movements
2022	51500	25750	24
2023	52530	26265	25
2024 (Implementation)	53580	26790	25
2025	54652	27326	25
2026	55745	27873	25
2027	56860	28430	26
2028	57997	28999	26
2029	59157	29579	26
2030	60340	30170	27
2031	61547	30774	27
2032	62778	31389	27
2033	64034	32017	27
2034 (10 years post implementation)	65314	32657	28

3.5	**What is the total monetised impact of 3.3? (Provide comments)** N/A

4. Benefits of ACP		Status			
4.1	**Does the ACP impact refer to the following groups and how they are impacted by the ACP?**				
		Not applicable	Qualitative	Quantified	Monetised
4.1.1	Air Passengers	x			
4.1.2	Air Cargo Users	x			

4.1.3	General aviation users		x	N/A	N/A
4.1.4	Airlines	x			
4.1.5	Airports	x			
4.1.6	Local communities		x	N/A	N/A
4.1.7	Wider Public / Economy		x	N/A	N/A
4.1.8	**Comments:** The sponsor states that *"London Biggin Hill Airport (LBHA) may experience capacity limitations due to traffic volumes in the LTMA, but this is a rare event and has a limited impact on LBHA operations"*, hence the proposed airspace change is not going to have an impact on GA users.				
4.2	**How are the above groups impacted by the ACP, especially (but not exclusively) looking at the following factors below:**				
4.2.1	Improved journey time for customers of air travel	N/A			
4.2.2	Increase choice of frequency and destinations from airport	N/A			
4.2.3	Reduced price due to additional competition because of new capacity	N/A			
4.2.4	Wider economic benefits	There is no expected impact on increased capacity, but this ACP aims to improve the resilience of the airport operations.			
4.2.5	Other impacts				
4.2.6	**Comments:**				
4.3	**What is the overall monetised impacts associated with 4.1 and 4.2 the above?** N/A				
4.4	**What are the non-monetised but quantified impacts of the above?** N/A				
4.5	**What are the qualitative / strategic impacts described above?** The aim of this ACP is to introduce a RNAV (GNSS) arrival route to RWY 21i: to be compliant with EASA Regulatory requirements, that will also meet CAA Airspace Modernisation requirements, and ii. to guarantee better resilience to the airport operations by providing a second instrument approach if the current ILS procedure is unavailable.				
4.6	**What is the overall monetised benefits-costs ratio (BCR) of the policy? Is it more than 1?**				

	N/A	
4.7	**Have the sponsors provided reasonable justification for the proportionality of analysis above?** Yes, the sponsor clearly states the number of aircraft movements that will be affected by the proposed change and being this very low (i.e., 2 aircraft a month, and the use of the MAP almost 30 times a year) the justification provided is robust.	
4.8	**If the BCR is less than 1, are the quantitative and qualitative strategic impacts proportional to the costs of the ACP?** N/A	

5. Other aspects	
5.1	Nil

6. Summary of Assessment of Economic Impacts & Conclusions	
6.1	The aim of the proposed airspace change is to establish new instrument approach procedures (IAPs) and a missed approach procedure (MAP) that are safe, efficient, and compliant with the EU regulations and in line with the CAA Airspace Modernisation Strategy (AMS). The sponsor identifies a comprehensive list of options, including radical ones, that are assessed against the DP and then fully descried in the IOA, following the criteria listed in Tab E2 – Appendix E CAP1616. Since the proposed change is going to impact 2 aircraft a month, and the use of the MAP almost 30 times a year, hence it is going to be a marginally small change the level of qualitative details provided is proportionate and sufficient at this stage. In the IOA the following options are fully described and assessed against the Do-Nothing: • Option 2A - VOR/DME Replication from ALKIN (3 Deg) • Option 2AD - VOR/DME Replication direct from OSVEV (3 Deg) (preferred option) • Option 9 - MAP Do Minimum Option (preferred option) These options will be taken forward to Stage 3 and will be fully assessed. Following the Clarification questions that were a requirement after the second Stage 2 Gateway, the Sponsor has made it clear that their preferred option is to replicate the ILS/DME/VOR not the VOR/DME (3deg offset procedure) and have a PBN to ILS procedure (replication). The qualitative statements in the IOA remain the same, despite there being references to VOR/DME replication.

Outstanding issues?		
Serial	Issue	Action required

1	Baseline	• The sponsor is required to clarify/provide the traffic forecast for the baseline year.

CAA Initial Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)	[redacted]	[redacted]	13/05/2022