

CAA CAP 1616 Options Appraisal Assessment (Phase I Initial)

Title of Airspace Change Proposal:	Biggin Hill Airport FASl		
Change Sponsor:	Biggin Hill Airport Ltd		
ACP Project Ref Number:	ACP-2018-69		
Case study commencement date:	16/02/2023	Case study report as at:	24/02/2023

Account Manager: [REDACTED]	[REDACTED]	Airspace Regulator (Engagement & Consultation): [REDACTED]	[REDACTED]	IFP: [REDACTED]	[REDACTED]	OGC: [REDACTED]	[REDACTED]
Airspace Regulator (Technical): [REDACTED]	[REDACTED]	Airspace Regulator (Environmental): [REDACTED]	[REDACTED]	Airspace Regulator (Economist): [REDACTED]	[REDACTED]	ATM (Inspector ATS Ops): [REDACTED]	[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 options (including Do Nothing (DN) / Do Minimum (DM))			Status
1.1	Are the outcomes of the Initial Options Appraisal (IOA) (Phase I) clearly outlined in the proposal?		   
1.1.1	Has the change sponsor completed an Initial Options Appraisal? [E12]	Yes, the sponsor has produced the IOA document along with the Appendix provided as a separate MS Excel-based file that contains the full analysis of the comprehensive list of departure and arrival options.	   
1.1.2	Does the Initial Options Appraisal include: - a comprehensive list of viable options; - a clear description of the baseline scenario; - an indication of the environmental impacts; - a high-level assessment of costs and benefit involved	<p>TJ – The sponsor has met the minimum requirements in terms of a baseline description for Stage 2. In addition, the sponsor has made reference to relevant NSA/NPRs, noting that such agreements can be amended as part of the FASI programme.</p> <p>The sponsor has provided an indication of the environmental impacts of each option against the relevant CAP1616 environmental assessment criteria; however, there are inconsistencies and inaccuracies present.</p> <p>It should be noted that the tranquillity and biodiversity assessments have been included within the noise and air quality assessments respectively. These assessments should be separated for the Full Options Appraisal at Stage 3.</p> <p>BM – The IOA is carried out by the sponsor for the comprehensive list of all departure and arrival options considered in the DPE phase because the sponsor hasn't yet considered specific or defined routes but they're representative swathes of potential operations to determine where LBHA (London Biggin Hill Airport) might find the optimum routes having regard to the agreed DPs. So, the comprehensive list of options potentially includes unviable options along with viable options as well at this stage.</p>	   

		<p>DPE document provides the descriptions for the baseline options for arrival and departure procedures. The sponsor provided the thorough impact analysis for Do Nothing options in the DPE document and also included them in the IOA Appendix Issue 1.</p> <p>The IOA Appendix Issue 1 provides the qualitative discussion of the impacts that needs assessing for a typical airspace change for all departure and arrival options. The sponsor also provided why some stakeholders do/do not prefer some of the options with reasons why and how these will be mitigated if not discounted for the next stage.</p>	
1.1.3	Has the sponsor stated on what criteria the comprehensive list of viable options has been assessed?	Yes, the criteria are defined for each impact assessed for the comprehensive list of options in the IOA and the sponsor provided rationales for why keeping Do Nothing option would be ineffective by expanding the explanation for criteria.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.4	Where options have been discounted as part of the IOA exercise, does the change sponsor clearly set out why?	The sponsor has used RAG status in the IOA Appendix Issue 1 and discounted red options and keep the rest (in green) for the next stage. The sponsor decided to discount options which stakeholders are concerned due to the noise impact in general. That said, a few options were not discounted even though the sponsors share their concern with or their opinion to consider other ways of implementing a similar option. The sponsor clearly highlights all the rationale for these and explained such options will be taken forward for further development at Stage 3.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.5	Has the change sponsor indicated their preferred option(s) as a result of the IOA (Phase I - Initial)? [E12]	The sponsor reduced the comprehensive list of options to fifteen preferred options and four less attractive but viable options. The sponsor's Appendix Issue 1 to the IOA also provided the summary of their	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

		conclusion for each of the option explaining the difference for a preferred and alternate option.	
1.1.6 	Does the IOA (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)?	<p>TJ - The sponsor has detailed the information that it will provide at Stage 3 which aligns with the environmental requirements set out in Appendix B of CAP1616.</p> <p>BM – The sponsor stated their proposed method overview in Section 4.3.2 of the IOA which is in line with CAP 1616 Appendix E requirements.</p>	   
1.1.7	Does the plan for evidence gathering cover all reasonable impacts of the change? [E12]	Yes, the sponsor confirmed quantitative assessment will be delivered at Stage 3 for greenhouse gasses, noise, fuel burn, and for the other impacts where monetisation is possible. So, their approach for Stage 2 is concluded to be proportionate and cover typical impacts of an airspace change.	   

2. Impacts of the proposed airspace change					Status
2.1  	Are there direct impacts on the following:				   
2.1.1 	<i>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)</i>				
2.1.2	Airport/ANSPs	Not applicable	Qualitative	Quantified	Monetised
	- Infrastructure	X			
	- Operation		X	N/A	N/A
	- Deployment		X	N/A	N/A
	- Other(s)	X			
2.1.3	Commercial Airlines/General Aviation	Not applicable	Qualitative	Quantified	Monetised

	- Training		X	N/A	N/A
	- Economic impact from increased effective capacity		X	N/A	N/A
	- Fuel burn		X	N/A	N/A
	- Other(s)	X			
2.1.4	General Aviation	Not applicable	Qualitative	Quantified	Monetised
	- Access		X	N/A	N/A
2.1.5	Military	Not applicable	Qualitative	Quantified	Monetised
		X			
2.1.6	Wider society, i.e., wider economic benefits, capacity resilience	Not applicable	Qualitative	Quantified	Monetised
			X	N/A	N/A
2.1.7	Other (provide details)	Not applicable	Qualitative	Quantified	Monetised
		X			
2.2	Are there direct beneficial impacts on air traffic control / management systems? Provide details.				<div><div></div><div></div><div></div><div></div></div>
2.3	Where impacts have been monetised, what is the overall value (expressed in net present value (NPV)) of the project? N/A - The sponsor has not yet delivered a quantitative analysis as the minimum requirement for Stage 2 is the qualitative discussion and analysis of the impacts for the proposed options.				
2.4	Has the sponsor provided an accurate and proportionate assessment of the proposed airspace change impacts? Yes, the sponsor has qualitatively assessed all options in the comprehensive list of options against the baseline option and stated quantitative analysis will take place in Stage 3 for further development of the indicative swathes which is concluded to be proportionate, accurate and aligns with CAP 1616 requirements.				<div><div></div><div></div><div></div><div></div></div>

3. Changes in air traffic movements and projections	Status
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3.1	If the proposed airspace change has an impact on the following factors, have they been addressed in the proposal?			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		Not applicable	Qualitative	Quantified/ Monetised
3.1.1	Number of aircraft movements		X	X
3.1.2	Number of air passengers / cargo	X		
3.1.3	Type of aircraft movements (i.e., fleet mix)	X		
3.1.4	Distance travelled		X	N/A
3.1.5	Operational complexities for users of airspace		X	N/A
3.1.6	Flight time savings / Delays		X	N/A
3.1.7	Other impacts	X		
	Comments: The IOA indicates that LBHA handled 36,763 aircraft movements in 2021, all of which were non-commercial operations as LBHA doesn't support Commercial Air Transport. The sponsor expects the aircraft movements to rise approximately 50,000 annual movements in 2023. LBHA also expects the business to continue to grow by 1,000 aircraft movements per annum for the period of 10 years from the intended year of implementation (61,000 aircraft movements is expected in 2034). In addition to this, the IOA explains that early turnouts to proceed to direct route and continuous climb operations (CCOs) to 7,000ft could reduce the overall track distance and could have significant reduction in fuel burn for airlines.			
3.2	<ul style="list-style-type: none"> Has the sponsor used the most up-to-date, credible, and clearly referenced source of data to develop the 10 years traffic forecast and considered the available guidelines (i.e., the Green Book and TAG models) in a proportionate and accurate manner? [B11 and E11] A detailed 10-year traffic forecast will be provided at Stage 3. At this stage, the submission notes that the traffic movements are set to increase from 36,763 (2021) to 61,000 (2034) as per LBHA Management estimates.			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	<ul style="list-style-type: none"> Has the sponsor explained the methodology adopted to reach its input and analysis results? [B11 and E11] The sponsor has presented 51 dB LAeq, 16h noise contours prepared by Bickerdike Allen Partners LLP (BAP) for 2022 and 2032 based on average summer daytime movements of 15,576 (2022 actual) and 18,688 (2032 forecast). Population data at the postcode level has been provided by CACI Ltd. along with population growth estimates from ONS. The sponsor refers to the BAP report A11103-R05-DR, dated February 2022 for more details on the methodology used.			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.3	Has the sponsor developed an assessment of the following environmental aspects? The contour areas and population impacted under the average summer daytime contours for 2022 and 2032 have			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

	been presented, however all other metrics have been assessed qualitatively. The sponsor has identified the relevant AQMAs, AONBs and SSSIs potentially impacted by the change along with estimating the possibility of direct routings and therefore reduced emissions for some options.				
		Not applicable	Qualitative	Quantified	Monetised
3.3.1	Noise		X		
3.3.2	Operational diagrams	X			
3.3.3	Overflight	X			
3.3.4	CO2 emissions		X		
3.3.5	Local air quality		X		
3.3.6	Tranquillity		X		
3.3.7	Biodiversity		X		
3.4	What is the monetised impact (i.e., Net Present Value (NPV)) of 3.3? (Provide comments) N/A - The sponsor stated in the IOA that detailed quantitative assessment will be delivered for noise impact at Stage and monetised using quantitative estimates from the DfT's appraisal guidance for health impacts associated with noise.				


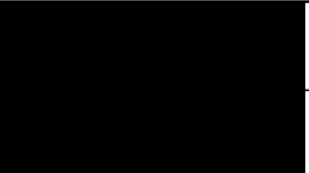

4. Economic Indicators of the ACP		Status
4.1	What are the qualitative / strategic impacts described in the ACP? LBHA stated in the IOA that they are required to redesign the portion of the arrival and departure routes at the airport up to a height of 7,000ft amsl, where these routes must join and integrate with a new overarching route structure to be designed entirely by NATS. The sponsor expects noise impacts to be reduced, although new populations could be overflown. In addition to the noise impact, another direct impact expected from the change is with fuel burn and GHG; the sponsor aims to reduce track distance by enabling early turnouts to proceed to direct route and CCOs which will result in fewer track miles and less emissions. Last but not least, the airspace change would be systemised and aligned with the new network route structure which will have the potential to improve capacity and resilience.	
4.2	What is the overall monetised and non-monetised (quantified) impact of the proposed airspace change? N/A – The level of the analysis is qualitative for the initial phase of the options appraisal.	
4.3	What is the Net Present Value of the proposed options? Has the sponsor used this information to progress/discount options? Has the sponsor provided the benefits-costs ratio (BCR) of the proposed options and used it to support the choice of the preferred options? [E44] N/A	

4.3.1	If the preferred option does not have the highest NPV or BCR, then has the sponsor justified the reasons to progress this option? [B50 and E23] N/A	
4.4	Have the sponsors provided reasonable justification for the proportionality of analysis above? Yes, the sponsor basically preferred to provide the minimum requirement for Stage 2 as the actual tracks are unavailable at this stage and the sponsor's considering indicative swathes only.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

5. Other aspects	
5.1	N/A

6. Summary of the Initial Options Appraisal & Conclusions		
6.1	<p>The sponsor has successfully completed the IOA and provided the minimum requirement by qualitatively analysing the typical airspace change impacts for the comprehensive list of options which are assessed against the baseline. The baseline definition and identification for arrival and departure operations are highlighted in detail in the DPE document. The requirement set out in CAP 1616 Appendix E2 has been fulfilled and the IOA comprises the information below:</p> <ul style="list-style-type: none">• a comprehensive list of viable options. This must include the 'do nothing/minimum' option which will act as the baseline for the analysis. The baseline should be fully described. The list of options must also include:<ul style="list-style-type: none">– a description of the change proposal– an indicator of the likely noise impacts– a high-level assessment of costs and benefits involved• criteria for assessing the list of options, and the application of those criteria to the list to develop the shortlist of options• shortlist options described qualitatively and an indication of the preferred option• what evidence the change sponsor will collect, and how, to fill in its evidence gaps and to develop the Full appraisal. <p>The sponsor also provided their preferred options and alternate for arrival and departure options. The IOA Appendix Issue 1 provides the qualitative discussion of the impacts of the proposed options against the Do Nothing option and the sponsor included a summary for their conclusion that shows the difference of a preferred option versus an alternate and discounted option along with the stakeholder concerns pertinent to each option.</p>	
	Outstanding issues	
Serial	Issue	Action required

1	Action for Stage 3: Tranquillity & Biodiversity Assessment	For the Full Options Appraisal at Stage 3 the sponsor is required to separate the Tranquillity and Biodiversity assessments from the Noise and Air Quality assessments respectively.

CAA Initial Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)			06/03/2023
Airspace Regulator (Environmental)			15/02/2023