



CAA CAP 1616 Options Appraisal Assessment (Phase I Initial)

Title of Airspace Change Proposal:	Farnborough Airport FASI		
Change Sponsor:	Farnborough Airport		
ACP Project Ref Number:	ACP-2022-038		
Case study commencement date:	23/09/2024	Case study report as at:	31/10/2024



Account Manager: [Redacted]	[Grey]	Airspace Regulator (Engagement & Consultation): [Redacted]	[Yellow]	IFP: [Redacted]	[Orange]	OGC: n/a	[Dark Blue]
Airspace Regulator (Technical): [Redacted]	[Green]	Airspace Regulator (Environmental): [Redacted]	[Purple]	Airspace Regulator (Economist): [Redacted]	[Light Blue]	ATM (Inspector ATS Ops): [Redacted]	[Red]

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.

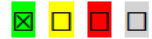
1. Background – Identifying the impact of the options (including Do Nothing (DN) / Do Minimum (DM))		Status
1.1	Are the outcomes of the Initial Options Appraisal (IOA) (Phase I) clearly outlined in the proposal?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.1	<p>Has the change sponsor completed an Initial Options Appraisal? [E12]</p> <p>Yes the sponsor has completed an IOA for each option and the No Nothing Baseline. Each option builds upon the last in terms of level of change from the Baseline. The sponsor acknowledges that any change delivered will be dependent on changes in the wider airspace system.</p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.2	<p>Does the Initial Options Appraisal include:</p> <ul style="list-style-type: none"> - 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>Yes. Chapter 2 of the IOA gives a summary of the options under assessment including how they differ from each other. This is furthered in Chapter 4 of the IOA details in a series of tables the options the Sponsor is considering including the Do Nothing Baseline and a series of Options from 2a to 5b.</p> <p>Yes. The IOA includes a clear description of the Do Nothing Baseline and further information is provided in Chapter 2 of the 2a document (Options Development). Information is given on both the existing and forecast baseline scenario. The sponsor has identified any planned housing developments which may need to be considered moving into Stage 3.</p> <p>The change sponsor has included a qualitative assessment for all environmental topics required for this stage (noise, local air quality, greenhouse gas emissions, tranquillity, and biodiversity) supported by a part-quantitative analysis on the environmental impacts of each Option allowing a comparison with the Baseline (as a percentage change in impact or in terms of NM difference in the case of fuel burn). Full WebTAG analysis for environmental assessment has been planned for the FOA.</p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>



		<p>The sponsor has included qualitative and quantitative assessments of the costs and benefits expected from each option compared to the Baseline including in depth qualitative analysis on the impact to the GA community from some Options. The Sponsor has elected to include a metric in their assessments for "Interdependencies, conflicts and trade-offs with other ACPs" to highlight potential trade-offs with nearby airports.</p>	
<p>1.1.3</p>	<p>Has the sponsor stated on what criteria the comprehensive list of viable options has been assessed?</p>	<p>The sponsor has included Table 4 in the IOA with their assessment criteria based off the CAP1616 Appendix E categories and have also included the additional "Interdependencies..." category as explained above. The categories are:</p> <ul style="list-style-type: none"> • Noise • Air Quality • GHG • Airspace capacity and resilience • Biodiversity and Tranquillity • GA and commercial airline impacts (access, capacity, fuel burn, training and other costs). • Airport and ANSP costs • Safety • Interdependencies and performance against objectives of AMS. 	
<p>1.1.4</p>	<p>Where options have been discounted as part of the IOA exercise, does the change sponsor clearly set out why?</p>	<p>Yes. The sponsor has detailed in Chapter 5 the IOA conclusions and reasoning for discounting certain design options or components based off both the AMS vision and the assessment criteria highlighted above. Each Option and its components are assessed, and the discounted options or components are explained.</p> <p>A preferred option (Option 5) is put forward due to increased systemisation, positive noise and CO2 impacts and the ability to release elements of CAS to Class G. The sponsor highlights that although this option is preferred at the IOA stage, the final option at Stage 3 will</p>	

		likely include a combination of components that have been progressed from other Options. A table is included with these progressed components.	
1.1.5	Has the change sponsor indicated their preferred option(s) as a result of the IOA (Phase I - Initial)? [E12]	Yes, the Sponsor has highlighted Option 5 as the preferred and has also included a list of components being progressed which may make it into the final option.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
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)?	Yes. The sponsor includes details in section 5.2 of the information it needs to collect for the FOA and recognises the need to use primarily quantitative analysis as far as possible at Stage 3. Plans to fill the evidence gaps include: <ul style="list-style-type: none"> • A quantified and monetised environmental assessment including WebTAG assessments, fuel burn and equivalent CO2 emissions data • Overflight contours that detail frequency of overflight and cumulative impacts from arrivals/departures and other airports • Further information around interdependencies with the NERL network and neighbouring airports • ATC deployment / training costs • Quantified CAS requirements 	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.7	Does the plan for evidence gathering cover all reasonable impacts of the change? [E12]	Yes.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

2. Impacts of the proposed airspace change		Status
2.1	Are there direct impacts on the following:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
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		
	- Deployment		X		
	- Other(s)		X		
2.1.3	Commercial Airlines/General Aviation	Not applicable	Qualitative	Quantified	Monetised
	- Training		X		
	- Economic impact from increased effective capacity		X		
	- Fuel burn		X		
	- Other(s)		X		
2.1.4	General Aviation	Not applicable	Qualitative	Quantified	Monetised
	- Access		X		
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
2.1.7	Other (provide details)				
	The sponsor has included qualitative information for “Interdependencies, conflicts, and trade offs with other ACPs” and “Performance against the vision and parameters/strategic objectives of the AMS”				
2.2	Are there direct beneficial impacts on air traffic control / management systems? Provide details.				
2.3	Where impacts have been monetised, what is the overall value (expressed in net present value (NPV)) of the project? No NPV at this stage.				

2.4	<p>Has the sponsor provided an accurate and proportionate assessment of the proposed airspace change impacts?</p> <p>Yes, the sponsor has qualitatively and quantitatively assessed the preferred option against a range of criteria which is proportionate at this stage.</p>	
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3. Changes in air traffic movements and projections			Status
3.1	If the proposed airspace change has an impact on the following factors, have they been addressed in the proposal?		
		Not applicable	Qualitative
			Quantified/ Monetised
3.1.1	Number of aircraft movements	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
3.1.5	Operational complexities for users of airspace		X
3.1.6	Flight time savings / Delays	X	
3.1.7	Other impacts		
	<p>Comments:</p> <ul style="list-style-type: none"> Unlikely to be interdependencies with Northolt and London City ACP Under Option 5, there is no details on the impact of aircraft movements, number of pax, fleet mix. The IOA does include details about a Planning Application to increase the movement cap from 50k-70k annually. Document 2a includes links (broken) to the Rushmoor Borough Council for more information on forecast movements and fleet-mix for the Planning Application. 		
3.2	<p>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]</p>		

	<p>The sponsor has not included in-depth information on forecasts within this ACP, instead has linked to the forecasts used for their Planning Application to increase the flight cap from 50-70k annual flights. The links provided within the 2a document are broken. The sponsor could include details of this forecasting methodology within the ACP for readers.</p> <ul style="list-style-type: none"> • Has the sponsor explained the methodology adopted to reach its input and analysis results? [B11 and E11] <p>The change sponsor has described the methodology and assumptions used to reach its analysis outcome as regards the environmental impacts, such as the baseline used, population counts within a 60dB and 65dB LAMAX contour of a single event of a typical aircraft (Global Express Business Jet) generated using a standard AEDT (Aviation Environmental Design Tool) profile assuming the same climb profile across options and Census 2021 data.</p>				
<p>3.3</p>	<p>Has the sponsor developed an assessment of the following environmental aspects?</p> <p>The change sponsor has provided a qualitative assessment for all environmental topics required for Stage 2, supported by a part-quantitative analysis.</p> <p><u>Noise</u>: qualitative description of the expected changes supported by 60dB and 65dB LAMAX contours to assess the % change for the number of people and % of people overflown and % change in the overflight of education, healthcare, and worship places, compared to the baseline, assuming all traffic is on the route centreline.</p> <p><u>Local air quality</u>: identification of the AQMAs in the vicinity of the airport and a qualitative assessment as to whether changes to flight paths below 1000ft are anticipated as a result of the different design options.</p> <p><u>Greenhouse gas emissions</u>: difference in track miles between the baseline and proposed design options, considering 2023 movements, the 20-year average modal split and the same directional split of traffic.</p> <p><u>Tranquillity</u>: information on the current overflight of the North Wessex Downs and Surrey Hills AONB and the South Downs National Park and a qualitative description of the expected impact, supported by % change in the overflight, compared to the baseline.</p> <p><u>Biodiversity</u>: identified Special Protection Areas (SPAs), Special Areas of Conservation (SACs), National Parks, RAMSAR and/or Sites of Special Scientific Interest (SSSI) in the vicinity of the airport and a qualitative assessment of whether changes to flight paths are likely to cause impacts upon biodiversity.</p>	<p><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>			
	<p>Not applicable</p>	<p>Qualitative</p>	<p>Quantified</p>	<p>Monetised</p>	
<p>3.3.1</p>	<p>Noise</p>		<p>X</p>		
<p>3.3.2</p>	<p>Operational diagrams</p>		<p>X</p>		
<p>3.3.3</p>	<p>Overflight</p>		<p>X</p>		
<p>3.3.4</p>	<p>CO2 emissions</p>		<p>X</p>		

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)				
	NPV not calculated at this stage.				

4. Economic Indicators of the ACP	
4.1	<p>What are the qualitative / strategic impacts described in the ACP?</p> <p>The impacts of the preferred option are greater systemisation, positive noise and CO2 impacts and the release of elements of airspace to Class G.</p>
4.2	<p>What is the overall monetised and non-monetised (quantified) impact of the proposed airspace change?</p> <p>The sponsor has not monetised any impacts at this stage.</p> <p>The sponsor has provided some quantified impacts for Noise and population overflow and Biodiversity and Tranquillity as a percentage change from the Baseline for both “With Biggin Hill” routes and “Without...”. The sponsor has also included quantified information on the reduction of NMs flown by Farnborough movements (-73,949 for 5a and -69,945 for 5b). Other impacts have been qualitatively described at this stage.</p>
4.3	<p>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]</p> <p>N/A</p>
4.3.1	<p>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]</p> <p>N/A</p>
4.4	<p>Has the sponsor provided reasonable justification for the proportionality of analysis above?</p> <p>Yes. The sponsor has explained that at the IOA stage the assessment is to show the changes from each option to sponsors, stakeholders and the CAA and highlight the relative differences to the baseline. The analysis at this stage is mostly qualitative but the sponsor has included quantified analysis where needed to compare with the Baseline.</p>



5. Other aspects	
5.1	

6. Summary of the Initial Options Appraisal & Conclusions			
6.1	<p>Overall the sponsor has selected a preferred option after a (mostly) qualitative assessment against a range of criteria and discounting of options and components. The sponsor has presented the methodology and assessment criteria clearly and has assessed each option systematically. The sponsor is aware that additional quantification and monetisation will be required at the next Stage and has highlighted their planned methodology and data sources for this.</p> <p>Information on the traffic forecasts could be included in the ACP (and not linked to another Planning Application).</p>		
Post gateway requirements and/or recommendations			
6.2	<p>Recommendation: Information on the traffic forecasting methodology could be included in the ACP (and not linked to another Planning Application).</p>		
Decisions Pending – Post Gateway Actions Required			
Issue(s)	Corrective Action(s) for Sponsor	Gateway Recommendation Reference(s)	CAP 1616 Reference(s)
Sponsor Action(s) Taken		Requirement(s) Resolved?	
		<p style="text-align: right;"> Not Resolved <input type="checkbox"/> Resolved <input type="checkbox"/> </p>	

CAA Initial Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)	[REDACTED]	[REDACTED]	30/10/2024
Airspace Regulator (Environmental)	[REDACTED]	[REDACTED]	30/10/2024