CAA CAP 1616 Options Appraisal Assessment (Phase I Initial)

Title of Airspace Change Proposal:	Leeds Bradford Airport FASI (MTMA Cluster)		
Change Sponsor:	Leeds Bradford Airport Ltd		
ACP Project Ref Number:	ACP-2021-066		
Case study commencement date:	02/01/2026	**Case study report as at:**	23/02/2026

Account Manager: [redacted]	**Airspace Regulator (Engagement & Consultation):** [redacted]	**IFP:** [redacted]	**OGC:** [redacted]
Airspace Regulator (Technical): [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:

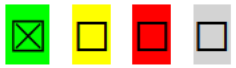
Resolved - GREEN Not Resolved – AMBER Not Compliant – RED Not Applicable - GREY

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 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. IoA document supplied as part of Stage 2b.	☒ ☐ ☐ ☐
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	The change sponsor has adopted a systems-based approach to the development and generation of viable options, centred around RWAY 32 / 14 arrivals and departure routes. The list of viable options has been obtained from the DPE which the sponsor has undertaken as part of Stage 2A. The Stage 2A document also identifies and presents the current day airspace structures, IAP's and NPR's for LBA's operations. The change sponsor has provided a clear and detailed description of the "do nothing" baseline scenario. The expected year of implementation is to be confirmed and not specified, but an assumption has been made that there will be no changes before 2027. A traffic forecast has been provided from 2029 to 2038, spanning a 10-year appraisal period. The current forecast traffic is constrained by the terminal building, which requires a new planning application. The terminal capacity is restricted to 7 million passengers a year, which is forecast to be achieved by 2030. The forecast is not split by fleet / aircraft, but the sponsor has provided high-level information on fleet mix, noting that there is a 1:10 ratio of turbo-prop to jet aircraft. The majority of aircraft are Boeing 737, 300 &	☒ ☐ ☐ ☐

		800 variants. The airlines operating at LBA will look to introduce more modern aircraft fleet, such as A321 neo and 737-Max 10's. The 2030 noise contour modelling includes these renewed fleet projections. Runway split is also noted, with 77% using RWAY32 / 23% RWAY 14 during the day. For night, it is 17% RWAY 14 and 83% RWAY 32. For noise modelling purposes the daytime model split has been applied. The sponsor has presented some local authority development allocations but has not used this within the IoA owing to the qualitative nature of work undertaken at Stage 2. The IoA includes an assessment and indication of likely environmental impacts. The sponsor has qualitatively assessed: **Noise impacts:** - Effects on L_Aeq contours (day and night) - Changes in overflight patterns using 2022 radar data - Likely population exposure changes - Cumulative noise impacts (e.g., departures overlapping arrival final approaches) **AQ impacts** - Identifies whether lateral changes below 1,000 ft could shift local emissions - Confirms that all options are outside any AQMAs - Notes that aircraft above 1,000 ft have negligible ground-level effects **GHG emissions and fuel burn** - Indicative track-mile comparisons relative to baseline and impact on potential fuel burn. - Qualitative implications for CO_2	

		- Vertical climb profiles have not been considered at this stage. **Tranquillity impacts** - Potential overflight of AONBs - National Parks near the proposed routing - South Pennine Moors / Ilkley Moor, treated as tranquillity-sensitive based on stakeholder engagement feedback. **Biodiversity / protected sites** - SSSIs, SACs, SPAs, Ramsar sites - Whether new options reduce, maintain, or introduce overflight below ~3,000 ft	
1.1.3	Has the sponsor stated on what criteria the comprehensive list of viable options has been assessed?	Yes, the change sponsor has used the below criteria to assess design options, albeit using a qualitative approach at this Stage of the 1616 process. Safety - Qualitative safety considerations for all design options. Noise impacts - Effects of cumulative noise impacts vs baseline dispersion; potential population exposure changes. Air quality - Whether any lateral changes <1,000 ft affect local AQ; consideration of AQMAs. Greenhouse gases and fuel burn - Indicative track-mile deltas relative to baseline to show direction-of-change in fuel burn/CO_2.	

		Capacity and resilience - Whether modernisation/systemisation may improve operational robustness (qualitative at this stage). Tranquillity - Sensitivity of tranquil areas including AONBs, National Parks, and stakeholder-identified areas like Ilkley Moor. Biodiversity / habitats - High-level assessment of potential overflight of SSSI, SAC, SPA and Ramsar sites. General Aviation access - Whether the route options require CTR/CTA changes and the implications for GA operations. Costs - High-level qualitative cost assessment (airlines, ATC training, infrastructure). Interdependencies - Conflicts or interactions with Manchester TMA, NERL network design, and neighbouring routes / ACOG's Masterplan Iteration 2. AMS alignment - Whether the option aligns with the UK Airspace Modernisation Strategy.	
1.1.4	Where options have been discounted as part of the IOA exercise, does the change sponsor clearly set out why?	The change sponsor has decided to take all options within the IoA into FoA, citing the governments ANG 2017 and the next stage likely influencing design of the overall system of airspace. The sponsor also cites that there is the requirement to bring together the component options into systems that work with other airports in the MTMA, and the en-route network managed by NERL.	☒ ☐ ☐ ☐

1.1.5	Has the change sponsor indicated their preferred option(s) as a result of the IOA (Phase I - Initial)? [E12]	No preferred option has been indicated by the sponsor, electing to undertake detailed analysis at Stage 3 for all design options currently presented.	☒ ☐ ☐ ☐
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, in section 6.2 of the IoA the change sponsor outlines the planned approach to collecting and using evidence at FoA stage. The sponsor has also noted where evidence gaps exist and intends to undertake the following at Stage 3: - 20 year modal split average for LBA - Quantify the baseline year (pre-implementation and 10 years post implementation, including 10 year traffic forecast) - Quantitative noise contours, including population counts and size (km2) - Quantitative overflight contours, including population, AONBs, National Parks, Candidate Quiet Areas, Country Parks, Gardens and Designated Landscapes, and Historic buildings. - WebTAG assessment - Detailed fuel burn and equivalent CO2 emissions data - Further information around interdependencies with the upper network and neighbouring airports - ATC deployment / training costs - Quantitative capacity information - Quantified CAS requirements - Data gaps have been identified as part of IoA for the HRA. To be addressed as part of Stage 3 once option designs are more certain and HRA impacts can be better understood.	☒ ☐ ☐ ☐
1.1.7	Does the plan for evidence gathering cover all reasonable impacts of the change? [E12]	The change sponsor has outlined how they intend to develop the FoA and evidence base, noting that some of the areas are reliant on the scope and detail of the design options (as these naturally become more developed). Given this, the current plan to build the	☒ ☐ ☐ ☐

		evidence base is reasonable and proportionate given the level of detail at IoA stage.	

2. Impacts of the proposed airspace change						Status
2.1	**Are there direct impacts on the following:**					☒ ☐ ☐ ☐
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)*					
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	

	Biodiversity, Capacity / Resilience, Tranquillity, AQ, GHG		X		
2.1.7	Other (provide details)				
	N/A				
2.2	**Are there direct beneficial impacts on air traffic control / management systems? Provide details.** Yes – network systemisation should result in reduced ATC tactical intervention and, as a result, reduced ATC and pilot workload. For FASI ACPs there is usually a reduction in the reliance on ground based navigational aids, reducing costs as compared to the baseline scenario; however, in the case of LBA this reduction may be very small as the current dependencies on ground-based navaids are minimal, as many have already been decommissioned.				☒ ☐ ☐ ☐
2.3	**Where impacts have been monetised, what is the overall value (expressed in net present value (NPV)) of the project?** N/A – no impacts have been monetised.				
2.4	**Has the sponsor provided an accurate and proportionate assessment of the proposed airspace change impacts?** Yes – the change sponsor has provided an accurate and proportionate assessment of the airspace change, adopting a qualitative approach that is aligned to Stage 2 of CAP1616 v4.				☒ ☐ ☐ ☐

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		X	
	Comments: N/A.			
3.2	• 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] - The change sponsor has provided a 10-year traffic forecast aligned to LBA's current business plan, highlighting that movement numbers are constrained by the existing terminal building. By 2030 there are expected to be 45970 movements which remain constant until the end of the appraisal period. The change sponsor has used 2022 summer radar tracks for the qualitative noise assessment (16th June to 15th September 2022). No TAG has been undertaken given the qualitative nature of work to date. - Whilst the use of more recent data may not necessarily yield impacts on the optioneering process, the change sponsor should consider using more up to date data for assessments in later stages, as the sponsors own forecasts show an almost 9% increase in total traffic from 2022 to 2024. - **Recommendation: For noise modelling and other impact assessments the sponsor should consider using more recent data to inform the analysis. In the interests of proportionality, the use of 2022 track data is acceptable for the purposes of a high-level qualitative assessment but is considered dated given the time elapsed.** • Has the sponsor explained the methodology adopted to reach its input and analysis results? [B11 and E11] - The IOA uses a qualitative Initial Options Appraisal against criteria including safety, noise, air quality, GHG/fuel, capacity, tranquillity, biodiversity, GA access, costs, interdependencies, and AMS alignment. All options are qualitatively assessed against the do-nothing baseline via indicative track-mile changes. - The methodology explains the limits of analysis at this stage—reflecting the absence of fixed PBN centrelines, vertical profiles, and confirmed network interfaces—and defers full quantitative assessments (noise contours, fuel/CO_2, capacity/delay, HRA-level biodiversity work, and economic monetisation) to Stage 3.			
3.3	**Has the sponsor developed an assessment of the following environmental aspects?**			

		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 – no quantification has been undertaken as part of Stage 2 submission.				

4. Economic Indicators of the ACP	
4.1	**What are the qualitative / strategic impacts described in the ACP?** - Modernised PBN procedures reduce tactical controller workload and ambiguity, and improve predictability - PBN systemisation will reduce the geographic spread of noise but increase frequency for communities under new centrelines. - Some options introduce new noise exposure, others remove baseline exposure over places like Bradford or moorland. - Several options create cumulative noise impacts, particularly where departures interact with opposing runway final approaches. - Little impact on AQ given that aircraft about 1000ft do not affect ground level AQ and no declared AQMA's. - Potential for GHG and fuel burn changes dependent on final track mileage changes of each option, assessed qualitatively at this stage. - Capacity and resilience impacts are unable to be determined at this stage. - Tranquillity benefits / impacts are dependent on the option selected, with some options reducing overflight of moorland and others introducing new overflight of tranquil spaces. - GA impacts are dependent on how much controlled airspace is increased / reduced by with each of the respective options. - Deployment costs are not a significant differentiator between options, with routine costs being associated with airline training and AIRAC updates. - Design options could interact with MTMA and NERL's future network design above 7,000ft. Network interdependencies will influence design at stage 3. - All DS options support AMS objectives whilst the DN does not.

4.2	**What is the overall monetised and non-monetised (quantified) impact of the proposed airspace change?** - No monetisation has been undertaken at this stage. Qualitative impacts as outlined in 4.1.	
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 – No options have been assessed quantitatively.	
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 – No options have been assessed quantitatively.	
4.4	**Has the sponsor provided reasonable justification for the proportionality of analysis above?** The change sponsor has undertaken a qualitative appraisal of impacts at this stage, covering a range of potential impacts on both non-aviation and aviation stakeholders. The sponsor has provided justification of the approach adopted and details why it is proportionate for a Stage 2 submission. The sponsor notes: - Detailed route designs do not yet exist (only swathes and indicative centrelines). - Network constraints and interactions with NERL are not yet resolved. - Vertical profiles (required for fuel burn, CO_2, and noise modelling) cannot be defined until Stage 3. - CAP1616 explicitly requires qualitative assessment at this stage, not full quantification. Given the lack of design maturity and high-level approach adopted to date, this is deemed to be a suitable and proportionate approach to understand the impacts of the airspace change. Detailed modelling will be undertaken at Stage 3.	☒ ☐ ☐ ☐

5. Other aspects	
5.1	N/A.

6. Summary of the Initial Options Appraisal & Conclusions

6.1	The sponsor has completed a qualitative Initial Options Appraisal (IOA) in accordance with CAP1616 v4. The IOA has a well-defined "do-nothing" baseline with a list of viable 'do-something' options for both departures and arrivals at Leeds Bradford Airport (LBA). No options have been discounted as part of the IoA, with the sponsor retaining the options for further assessment at Stage 3. The baseline assessment includes: • Current vectoring arrangements for arrivals and departures • Present NPR constraints • Traffic forecasts to 2036 • Fleet assumptions (transition toward quieter aircraft) • Modal split (≈77% RWY32 use) • Existing environmental and operational impacts and alignment with AMS. **Options Considered** The IOA includes a full suite of systemised PBN-based options: • **RWY 32 departures:** Southeast (32SEB-32SEG), South & West (32S&WA-32S&WH), and new early-turn/combination concepts (32NEWB-NEWE). • **RWY 14 departures:** Southeast, South & West, and "new" options (14SEA-14NEWB). • **Arrivals systems:** Multiple holding configurations (A1, A6, A7, A8, A9, A10, A11) plus RNP-AR approaches for RWY14/32. All options are feasible at this stage and progress to qualitative appraisal. All options have been assessed qualitatively, with no monetised or quantified assessments being undertaken as is proportionate for Stage 2. The change sponsor has assessed the following impacts: - Safety - Noise - Air quality - Greenhouse gases / fuel burn, using indicative track-mile changes - Tranquillity (AONBs, National Parks, stakeholder-identified areas such as Ilkley Moor) - Biodiversity (SSSI/SAC/SPA overflight changes) - GA access - Costs (qualitative, primarily ATC training/transition); - Interdependencies with NERL and Manchester TMA; - AMS alignment.
Post gateway requirements and/or recommendations	

6.2	- **Recommendation:** For noise modelling and other impact assessments the sponsor should consider using more recent data to inform the analysis at Stage 3. In the interests of proportionality, the use of 2022 track data is acceptable for the purposes of a high-level qualitative assessment but is considered dated given the time elapsed.	

Decisions Pending – Post Gateway Actions Required			
Issue(s)	**Corrective Action(s) for Sponsor**	**Gateway Recommendation Reference(s)**	**CAP 1616 Reference(s)**
N/A			
Sponsor Action(s) Taken		**Requirement(s) Resolved?**	
		Not Resolved ☐ Resolved ☐	

CAA Initial Options Appraisal Completed by	**Name**	**Signature**	**Date**
Airspace Regulator (Economist)	[redacted]	[redacted]	21/01/2026
Airspace Regulator (Environmental)	[redacted]	[redacted]	27/01/2026