CAA CAP 1616 Options Appraisal Assessment (Phase I Initial)

Title of Airspace Change Proposal:	London City Airport FASI ('LTMA' Cluster)		
Change Sponsor:	London City Airport		
ACP Project Ref Number:	ACP-2018-89		
Case study commencement date:	25/05/2022	**Case study report as at**:	24/06/2022

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 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 Initial Options Appraisal (IOA) for arrival and departure route design options and the baseline option which is the current operation in LCY Airport.	☒ ☐ ☐ ☐
1.1.2	Does the list of options include a description of the change proposal?	The description of the design options is available in Stage 2A (i) document.	☒ ☐ ☐ ☐
1.1.3	Has the sponsor stated on what criteria the longlist of options has been assessed?	Yes, the change sponsor has stated the qualitative criteria in Stage 2A (ii) document when conducting the Design Principle Evaluation (DPE). The reason for Met, Partially Met or Not Met has been explained clearly by defining the criteria and explaining how the options will perform by looking into each criteria defined.	☒ ☐ ☐ ☐
1.1.4	Where options have been discounted, does the change sponsor clearly set out why?	The change sponsor has discounted few options as a result of the DPE and it is clearly explained in Stage 2A (ii) why certain options have been deleted. Basically, the change sponsor has discounted the options which have not met the upper Tier 1 DPs that encompass safety concerns.	☒ ☐ ☐ ☐
1.1.5	Has the change sponsor indicated their preferred option in the Options Appraisal (Phase I - Initial)? [E8]	The change sponsor has stated in the Stage 2B document paragraph 6.1.6 that they plan to state the preferred option when they conduct the cost-benefit analysis as compromises and trade-offs would be necessary to understand which options would bring the highest benefit taking into account other airports taking part in the FASI-S regional airspace change. So, the CAA has concluded that at this stage as the change sponsor defined the high-level options, it'd be reasonable to wait until Stage 3 to indicate the preferred 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	The change sponsor has detailed their plan for Stage 3 in Stage 2B paragraph 6.1.5 and 6.1.6 and	☒ ☐ ☐ ☐

	any evidence gaps and how this will be used to develop the Options Appraisal (Phase II - Full)?	confirmed they will conduct noise modelling analysis to Category B standards. In terms of fuel burn/CO2 modelling analysis, they stated the most recent appropriate version of Eurocontrol's Base of Aircraft Data (BADA) would be used as the data source and confirmed the results would be subsequently assessed using TAG tools. Following on from this, the change sponsor also confirmed in the latter paragraph that a cost-benefit analysis would be performed to be able to indicate their preferred option. In order to conduct the cost-benefit analysis, they underlined that the tools provided by the Airspace Change Organising Group (ACOG) and their advice on trade-offs would guide the analysis.	
1.1.7	Does the plan for evidence gathering cover all reasonable impacts of the change? [E12]	Yes, the plan explained in the IOA covers all reasonable impacts of the change addressed in CAP 1616 process.	☒ ☐ ☐ ☐

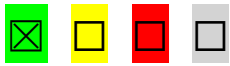
2. Direct impact on air traffic control					**Status**
2.1	**Are there direct cost impacts on air traffic control / management systems? If so, please provide below details of the factors considered and the level in which this has been analysed.**				☒ ☐ ☐ ☐
2.1.1	*Examples of costs considered (please add costs that have been discussed, and any reasonable costs that the Airspace Regulator (Technical) feels have NOT been addressed)*				
		Not applicable	Qualitative	Quantified	Monetised
2.1.2	Infrastructure changes	X			
2.1.3	Deployment		X	N/A	N/A
2.1.4	Training	X			
2.1.5	Day-to-day operational costs / workload / risks	X			
2.1.5	Other (provide details)	X			

2.1.7	**Comments:** The change sponsor has indicated in the IOA that a system change for LCY would involve training c.180-200 controllers and 30 assistants via the use of various air traffic simulators (including sim prep, management and staffing), with additional engineering costs TBC. It is also stated in the IOA that the design options are not expected to change Airport or ANSP infrastructure impacts, beyond the initial deployment phase which will require some systems engineering amendments.				
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			
2.2.3	Reduced complexity / risk	X			
2.2.4	Other (provide details)	X			
2.2.5	**Comments:** The IOA states that it is not expected for the design options to change Airport or ANSP operational cost impacts.				
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?** Yes, the design options in general have the potential to contribute to the Airspace Modernisation Strategy (AMS) there aren't any expected direct costs or benefits except the mentioned training costs in Q2.1.7 that LCY Airport may borne after systems change.				☒ ☐ ☐ ☐

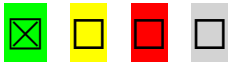
3. Changes in air traffic movements / projections					**Status**
3.1	**What is the impact of the ACP on the following and has it been addressed in the ACP proposal?**				☒ ☐ ☐ ☐
		Not applicable	Qualitative	Quantified	Monetised
3.1.1	Number of aircraft movements		X	N/A	N/A

3.1.2	Type of aircraft movement		X	N/A	N/A
3.1.3	Distance travelled		X	N/A	N/A
3.1.4	Area flown over / affected		X	N/A	N/A
3.1.5	Other impacts	X			
3.1.6	**Comments:** The IOA states in general for the arrival and departure route designs that the design options have the potential to enable an increase in capacity and each design option would contribute to increased effective capacity. The design options offer shorter flight plannable track distance and quicker climb would result in a reduced fuel burn impact on commercial traffic when compared with the baseline do-nothing option. The IOA also indicates the area that would be flown and might affect GA access for each option.				
3.2	**Has the forecasting of traffic done reasonably using best available guidance (e.g. DfT WebTAG, the Green Book, Academic sources…etc?)** The change sponsor stated in the Stage 2A (i) document that the long-term impact of Covid-19 on the aviation industry would be analysed at Stage 3. However, for further information and to highlight the traffic for the baseline scenario the change sponsor has shared the typical air traffic movements and aircraft types in 2019. In addition to this, the change sponsor provided the link in Stage 2A (i) paragraph 2.3.1 to their master plan which was published in 2020 and detailing the recent forecast that is expected to realise by the mid to late 2030s.				
3.3	**What is the impact of the above changes (3.1) on the following factors below?**				

		Not applicable	Qualitative	Quantified	Monetised
3.3.1	Noise		X		
3.3.2	Fuel Burn		X	N/A	N/A
3.3.3	CO2 Emissions		X		
3.3.4	Operational complexities for users of airspace		X	N/A	N/A
3.3.5	Number of air passengers / cargo		X	N/A	N/A
3.3.6	Flight time savings / Delays		X	N/A	N/A
3.3.7	Air Quality		X		

3.3.8	Tranquillity		X		
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?)** Yes, the change sponsor has provided a proportionate initial analysis for their options appraisal taking into account the comprehensive structure they have for their high-level departure and arrival routes. At this stage, they only qualitatively analysed the options as it'd be onerous for the change sponsor to quantify or monetise 38 options that were carried forward to the Step 2B. It is also confirmed in the IOA that greenhouse gas and noise impact would be analysed by using relevant TAG tools along with other associated impacts as required in CAP 1616 process.				
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	N/A	N/A
4.1.5	Airports		X	N/A	N/A
4.1.6	Local communities		X		
4.1.7	Wider Public / Economy		X	N/A	N/A
4.1.8	**Comments:** The IOA provides a similar impact analysis table compared to CAP 1616 Table E2 where for each impact the affected group is indicated and explained how each group mentioned above would be affected by the implementation of considered design options.				
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	Positive change as the design options would offer shorter departure routes.
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	Expected decrease in noise impact, greenhouse gas impact and expected potential to contribute to increased effective capacity which would all have a positive economic impact compared to the baseline system
4.2.5	Other impacts	N/A
4.2.6	**Comments:** N/A	
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 sponsor has stated in the IOA that if the baseline system was retained the potential increase in traffic as forecast and published in the 2020 master plan p.47 (link to 2020 master plan) could begin to constrain capacity and in turn could increase controller workload and traffic complexity within the London Terminal Manoeuvrings Area (LTMA) leading to potential safety issues in the future.	
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 has provided justification in the IOA paragraph 6.1.5 and 6.1.6 and explain why they have provided only the minimum requirement for the initial phase of the options appraisal and what they plan for the next stage in terms of quantification methods and the tools they will use to conduct the cost and benefit analysis.	
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	N/A

6. Summary of Assessment of Economic Impacts & Conclusions	
6.1	The change sponsor has completed the first phase of the initial options appraisal and provided the minimum criteria for this stage which is the qualitative discussions of the impacts expected from the viable design options. At this level the change sponsor has considered 38 options in total plus the baseline option which was discounted at Stage 2A because it wouldn't enable the airspace modernisation in a coordinated manner other sponsors of airspace changes under the AMS. The change sponsor has clearly explained the outcome of the Design Principle Evaluation activity and confirmed that all viable options were carried forward to the IOA. The IOA also includes the baseline scenario even though it was discounted at DPE but it is maintained in the IOA for comparison purposes. The qualitative criteria were detailed in the IOA and these were applied to the options list as required under CAP 1616 Appendix E. The change sponsor hasn't mentioned any preferred option at this stage and decided to keep all viable options to be assessed quantitatively at Stage 3. It is confirmed in the IOA that they would wait until they conduct the cost-benefit analysis as compromises and trade-offs would be necessary to understand which options would bring the highest benefit taking into account other airports taking part in the FASI-S regional airspace change. So, the CAA has concluded that at this stage, it'd be proportionate to wait until Stage 3 to indicate the preferred option. The change sponsor also provided the evidence on their plan for Stage 3 where they said noise impact assessment and fuel burn/CO2 assessments would be conducted through the DfT's TAG tools and a cost-benefit analysis would be provided for Stage 3 as required under CAP 1616 process.

Outstanding issues?

Serial	Issue	Action required
1	-	-
2		

CAA Initial Options Appraisal Completed by	Name	Signature	Date

Airspace Regulator (Economist)	[redacted]	[redacted]		24/06/2022