

CAA CAP 1616 Options Appraisal Assessment (Phase III Final)

Title of Airspace Change Proposal:	Aberdeen Airport Airspace Change		
Change Sponsor:	Aberdeen International Airport Ltd		
ACP Project Ref Number:	ACP-2019-82		
Case study commencement date:	10/11/2025	Case study report as at:	19/01/2026

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

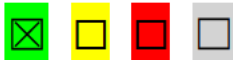
Not Compliant – RED

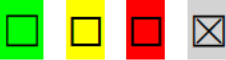
Not Applicable - GREY

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			Status
1.1	Has the change sponsor developed the full options appraisal into a final options appraisal to consider any revised impacts due to the updated final design option and/or changes in data using the same approach as in the earlier stages? [CAP 1616f: 5.12-5.16]	The sponsor has refreshed the appraisal following consultation to take account of feedback from consultation and engagement thus far. Following consultation, the underlying traffic forecasts and assumptions were reviewed and verified as still valid. The appraisal brought forward one design option for consultation after viable alternatives were ruled out on	☒ ☐ ☐ ☐

		grounds of greater complexity and safety. There were no other changes to the airspace design arising from consultation. The appraisal is also best considered in two parts, as the second bit of the appraisal was the release of controlled airspace to class D which would have happened regardless of the option chosen. The preferred option of Vectors to RNP (Vectors to Final Approach) for Runways 16 and 34; was not substantively amended, but the controlled airspace released took on board feedback from consultation. The final Instrument Flight Procedure (IFP) design work also resulted in no changes to the RNP procedures compared with those assessed in the Stage 3 FOA.	
1.2	Is the criteria and methodology used for analysing the impacts and the presentation of the information consistent with those adopted previously? [CAP 1616f: 5.13]	Sponsor is consistent with the earlier appraisal approach, where the same forecast traffic, population data and operational assumptions were applied to both the baseline and option cases. The methodology underpinning the impacts was broadly the same.	
1.3	Has the change sponsor used the most up-to-date, credible, and clearly referenced sources of data with modelling carried out in line with relevant best practice? [CAP1616f: 5.14]	Proportionality is applied in this criteria. The ACP was submitted in December 2025 prior to changes in the TAG appraisal sheets and significant volatility in jet fuel prices. It would be disproportionate to request the Sponsor update the appraisal to account for these changes post formal submission. The appraisal was drafted in anticipation of a Q1 2026 implementation. At the time of submission, sponsor has used recent, relevant and generally credible data sources, has explained the provenance of the key datasets, and	

		has retained the modelling approach used in the earlier appraisal stages. Data used where it informed analysis tended to be referenced and set out sections 4.1-4.3 of the appraisal The key data source used for forecasts was the 2022 Electronic Flight Strip data, which sponsor acknowledges was superseded by 2023 data which showed negligible difference. Sponsor has also used historical radar and track data, runway utilisation data to inform runway split assumptions, hold usage and intelligence on missed approaches and ILS outages, albeit these were limited due to their rarity. The appraisal updates fleet types expected to operate at Aberdeen. This informed the modelling for fuel burn and emissions modelling.	
1.4	Is the source of data and reference material clear in the final options appraisal? [CAP 1616f: 5.16]	As above, sponsor has satisfied this requirement. There is a clear audit trail for the data. The assumptions underpinning the modelling were a little less clear in terms of their provenance e.g. destinations mix for calculation of tradable emissions. But this made little difference to the conclusions.	
1.5	Has the change sponsor provided a rationale for any updates made to the final design option? [CAP 1616f: 5.17]	Few updates were actually made to the final design option following consultation. Sponsor set out in submission and in the appraisal, the responses which required reviewing the information informing the appraisal and feedback from IFP designers. No changes were made to the boundary of airspace in the preferred option, nor the RNP procedures.	
1.6	Has the change sponsor clearly described all the changes that have been made following the consultation and why they are required? [CAP 1616f: 5.17]	n/a	

1.7	Has the change sponsor assessed whether any of the environmental impacts have changed? [CAP 1616f: 5.18-5.19]	Sponsor has concluded there was no materially different change in the environmental impacts. However, this was after review of the traffic forecasts and assumptions underpinning the uptake of the new procedures by both fixed wing and rotary aircraft. For fuel burn and carbon dioxide emissions, there was a reassessment of the quantified impact, albeit very small and full results were then reported in the associated annex.	   
1.8	Has the change sponsor performed the environmental assessment and presented related information in a manner consistent with that used throughout the consultation process? [CAP 1616f: 5.19]	As above, Final Options Appraisal states that any revised impacts should be considered using the same approach as in the earlier stage, and concludes that the Stage 3 environmental assessment remains valid. It is straightforward to trace how the consultation assessment has flowed through to the final submission.	   
1.9	Has the change sponsor provided a final assessment of the impacts on safety? [CAP 1616f: 5.20-5.23]	The sponsor has provided a final assessment of safety impacts and set these out in a dedicated section of the submission.	   
1.10	Does the final safety assessment include: - A description of the scope of the proposed airspace change - Identification of the new and changing hazards - Identification and quantification of the risks arising from those hazards - Proposed mitigations to address the identified risks [CAP 1616f: 5.22]	As above but the content of the safety assessment has largely been addressed by the technical regulator	   

2. Potential Impacts	Status
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2.1	Has the change sponsor conducted a final options appraisal of the proposed airspace change using the following metrics and level of analysis? [CAP 1616f: 5.12]				   
2.1.1	Communities	Not applicable	Qualitative	Quantified	Monetised
	- Noise				X
	- Local air quality		X		
2.1.2	Airport/ANSPs	Not applicable	Qualitative	Quantified	Monetised
	- Infrastructure				X
	- Operational		X		
	- Deployment				X
	- Other(s)	X			
2.1.3	Commercial Airlines/General Aviation	Not applicable	Qualitative	Quantified	Monetised
	- Training		X		
	- Increased effective capacity		X		
	- Fuel burn			X	
	- Other(s)		X		
2.1.4	General Aviation	Not applicable	Qualitative	Quantified	Monetised
	- Access		X	X	
	- Increased effective capacity	X			
	- Fuel burn		X		
2.1.5	Wider society	Not applicable	Qualitative	Quantified	Monetised
	- Greenhouse gas emissions				X

	- Tranquillity			X	
	- Biodiversity			X	
	- Capacity/resilience		X		
2.1.6	Military	Not applicable	Qualitative	Quantified	Monetised
	-	X			
2.1.7	Other	Not applicable	Qualitative	Quantified	Monetised
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3. Economic Indicators			Status
3.1	Has the change sponsor provided traffic forecasts for year 1 and year 10? [CAP 1616f: 3.22]	Sponsor has provided traffic forecasts from 2026 to 2035 on the presumption of an implementation date of Q1 2026. The traffic forecasts are based on: 2022 EFPS operational data, Aberdeen Airport business-plan forecasts, forecast fleet-mix changes, growth assumptions extending to 2035. Given the nature of the change is procedures which would give additional options for resilience in the event of ILS outages, it would be disproportionate to review these forecasts in light of recent market conditions.	   
3.2	Has the change sponsor valued all relevant costs and benefits of the proposed airspace change using: - Net present value (NPV) - Benefit cost ratio (BCR) - Cost benefit analysis (CBA)?	Net present value of the preferred option compared to the baseline was £160k in 2024 prices. Largely driven by noise and fuel burn impacts. There was no BCR and it would not have been informative in this instance. The cost benefit analysis presentation in the appraisal contained the key information in a clear way.	   

	[CAP 1616f: 3.43]		
3.3	When appraising costs and benefits of the proposed airspace change, has the change sponsor assessed them incrementally against the baseline scenarios? [CAP 1616f: 3.45]	Sponsor consistently applies an incremental appraisal approach, comparing the "with airspace change" scenario against a "without airspace change" (do nothing) baseline throughout the Final Options Appraisal.	   
3.4	Has the change sponsor expressed the values derived for the costs and benefits set out above in 'real' rather than 'nominal' terms? [CAP 1616f: 3.46]	Sponsor largely presents the values in 2024 prices, but doesn't always make this clear.	   
3.5	Have values been reported in the base year for the assessment? [CAP 1616f: 3.47]	The base year for prices should be 2024 prices. Some of the outputs from the TAG workbook for noise are presented in 2010 values. The presumption is that the costs to the airport and ANSP are also in 2024 prices, rather than nominal prices, but this hasn't been made clear. Recommendation: Where impacts are monetised, sponsor should make clear the base year of the values being reported.	   
3.6	As well as taking account of inflation in real prices, has the change sponsor used a social time preference rate? [CAP 1616f: 3.48]	Sponsor used Green Book methodology in line with those available at the time of submission. This meant application of a 3.5% standard appraisal discount rate and 1.5% for health related impacts Within the workbook, sponsor has made the relevant adjustments to ensure infrastructure and deployment cost are presented in real terms. It is just presented in the documentation as nominal figures.	   

4. Summary of the Final Options Appraisal

4.1	What are the qualitative/strategic impacts of the proposed airspace change?	The primary benefit is resilience for the airport and airlines. In the absence of ILS, the baseline predicts that flights would be managed by a VOR/DME approach for runways 16 and 34 or a NDB/DME approach for runway 34. If necessary, holds or a missed approach would result. The preferred design option reduces vectoring and therefore workload for air traffic control and in turn excessive fuel burn for planes and helicopters facing difficulties descending into the airport. The proposed RNP procedures would therefore act as a resilience option, providing a modern satellite-based alternative when the ILS is unavailable. The second aspect of this submission is the release of controlled airspace, which in turn is part of the airspace modernisation process. This provides for improved access and potential safety benefits for General Aviation users which have generally not been quantified. Suggested benefits include higher-altitude transit outside CAS, improved soaring opportunities for Deeside Gliding Club and reduced likelihood of infringements.	
4.2	What are the overall non-monetised (quantified) impacts of the proposed airspace change?	According to the technical annex, assuming a 5% takeup of forecast traffic would make use of the new procedures, it would result in a small net population increase exposed to daytime noise. In year 1 of implementation, there would be a reduction of 900 people subject to overflight which increases to 1,300 people by year 10 of implementation. There are small reductions in overflow listed buildings, places of worship and schools. For aviation stakeholders, assuming the takeup of PBN is 5% of flights and the fleet mix stays constant, there would be an increase of 6 tonne in fuel burnt and +19 tCO₂e in emissions. The proposal also releases approximately 27.8 nm³ of Class D controlled airspace by raising the base of CTA-3 from 3,000 ft to 4,500 ft.	

4.3	Where impacts have been monetised, what is the overall net present value (NPV) of the proposed airspace change?	Option A - Vectors to Final Approach/RNP) was reported as -£160,067 (real 2024 prices, over the appraisal period).	   
4.4	Has the change sponsor used the economic assessment to progress/discontinue design options and support the choice of the proposed airspace change? If the proposed airspace change does not have the highest NPV or benefit cost ratio (BCR), then has the change sponsor justified the reasons to progress this airspace change?	Sponsor discounted design options prior to consultation largely due to the relatively complexity and safety implications taking on board feedback at the time. This was in addition to options discounted as part of the design principle evaluation. The economic assessment was used to support the choice of the proposed airspace change consulted upon.	   

5. Other Aspects

5.1	Sponsor has prepared a final options appraisal to accompany the submission which was based upon TAG workbooks and the most reasonable data available at the time to prepare the baseline forecasts. Sponsor assumes implementation period was Q1 2026. Given the scale of the airspace change, it would be disproportionate to request the sponsor update the appraisal when there would be no change to the conclusion taken forward which is largely in line with feedback by key aviation stakeholders. The release of controlled airspace has more consequential impacts for the wider population. Sponsor has attempted to set out a narrative based upon feedback of the key benefits for general aviation but could also have made an effort to reflect on the implications for communities and the natural environment on a qualitative basis. Recommendation: Where impacts are monetised, sponsor should always make clear the base year of the values being reported in the text.
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6. Conclusions

6.1	The preferred design option meant most of the impacts were largely unchanged. There was no material change to tranquillity receptors. The proposal is intended to provide resilience and modernisation, not to alter routine operations, and therefore most environmental and operational metrics show negligible differences. There were some benefits from overflight. Workbook has been validated. Most of the monetised impacts are largely in response to costs incurred by the airport and the fuel burn net costs.
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The preferred option that emerged from the Stage 3 Full Options Appraisal (FOA) and was carried forward into consultation was Vectors to RNP (Vectors to Final Approach) for Runways 16 and 34; and raising the base of the southwest portion of CTA-3 from 3,000 ft to 4,500 ft, releasing approximately 27.8 nm³ of Class D controlled airspace for general aviation use. This had a net benefit over 10 years of -£160k (2024 prices) largely due to airport infrastructure costs incurred and fuel burn which in turn is driven by an assumption of a 5% uptake by arrivals of the new procedures in preference to ILS.

Sponsor notes that traffic forecasts are unchanged. At least 95 percent of arrivals are expected to continue operating as per the current day scenario. The proposal does not seek additional movements. Capacity over the controlled airspace is maintained rather than increased. Other design options prior to consultation were largely ruled out on grounds separate from economic factors. The sponsor explains that the T-Bar and Curved Approach options were discontinued because the environmental differences between the options were negligible, but the T-Bar and Curved Approach options introduced greater complexity and safety risk.

The qualitative strategic benefits for modernising the airspace was to provide elective procedures for arrivals to Aberdeen airport in the event of an ILS outage which in turn would reduce air traffic control workload compared to others. However, the appraisal noted there were limited incidents of unplanned ILS outages at the airport for which to draw intelligence upon to inform the appraisal.

The proposal to release controlled airspace was almost separate to the options under consideration as it would be happening anyway, which effectively put the appraisal in two parts. For the proposal to raise the base of CTA-3 from 3,000 ft to 4,500 ft, the sponsor undertook surveillance analysis; ATC reviewed operational impacts; safety concerns raised during consultation were specifically considered; ATC concluded the release could be achieved safely; and the sponsor reports benefits to General Aviation users through improved airspace access and reduced risk of infringements at higher altitudes.

Sponsor reviews the full options appraisal submitted at consultation with evidence as part of the consultation and engagement period. Following consultation, the underlying traffic forecasts and assumptions were reviewed and verified as still valid. The final Instrument Flight Procedure (IFP) design work resulted in no changes to the RNP procedures compared with those assessed in the Stage 3 FOA. There were no changes to the airspace design arising from consultation. Few updates were actually made to the final design option following consultation, but suggestions were reviewed in relation to release of controlled airspace around visual reference points.

The environmental assessments from the Full Options Appraisal were considered still valid for Stage 4 and were carried through into the Final Options Appraisal using the same appraisal methodology. The sponsor has been largely consistent with the criteria, methodology and presentation approach used previously. There is an additional 6 tonnes of fuel burnt which arises because a small proportion (assumed 5%) of arrivals fly the RNP procedure rather than being vectored to the ILS. This should be offset by resilience benefits to aviation stakeholders during ILS outages that are not reflected purely by annual fuel calculations and monetised impacts. Similarly, sponsor has taken care to explain the assumptions

underpinning the rationale behind tradable emissions and non-tradable emissions. The approach taken in the methodology was consistent with that at full options appraisal aside from updates in the fleet mix.

The Final Options Appraisal generally provides a clear audit trail for the principal datasets, assumptions and reference material, particularly for traffic forecasts, fleet mix, environmental modelling inputs, planning developments and appraisal methodologies. The Final Options Appraisal nevertheless re-presents and confirms the outcomes for noise, fuel burn, greenhouse gas emissions (including traded emissions), air quality, tranquillity and biodiversity. As long as the Stage 3 environmental impacts remain valid, then so will the impacts at this stage.

The sponsor used identical traffic forecasts based upon 2022 data and business assumptions in both scenarios because the ACP is not intended to increase capacity or traffic levels. The 2022 data was then grown using Aberdeen Airport's long-term business plan traffic forecasts at the time to derive the 2026 implementation scenario and 2035 future assessment scenario. It is plausible as at the time of decision, that the data and assumptions for which the traffic forecast is based would be out of date by 2026, particularly given short-term disruptions in the aviation sector this past year. Similarly, the TAG workbooks were retired by DfT following submission by the Sponsor. It would be disproportionate to request the Sponsor refreshes and revalidates the forecast and appraisal values given the nature of the preferred design option. The conclusion would have remained the same regardless of updated GDP deflators, fuel price estimates and updated values in the TAG workbook.

CAA Final Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)			05/08/2026