

CAA CAP 1616 Options Appraisal Assessment (Phase I Initial)

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|---|--|---------------------------------|----------------------------|
| Title of Airspace Change Proposal: | Manchester Airport FASI (MTMA Cluster) | | |
| Change Sponsor: | Manchester Airport PLC | | |
| ACP Project Ref Number: | ACP-2019-23 | | |
| Case study commencement date: | 03/03/2023 | Case study report as at: | 31/03/2023 |

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|--|---------|--|----------|--|--------------|---|-------------|
| Account Manager: [Redacted] | [Grey] | Airspace Regulator (Engagement & Consultation): [Redacted] | [Yellow] | IFP: [Redacted] | [Yellow] | 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 | Has the change sponsor completed an Initial Options Appraisal? [E12] | Yes, the Sponsor has produced a 68-page Initial Options Appraisal. <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 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 | A shortlist of viable options is included in the Initial Options Appraisal. The full description and rationale for the ‘do nothing’ scenario is provided in the Design Options Report Sections 4.4.1 and 4.4.2, and a summary is provided in Section 3 of the Initial Options Appraisal. The do nothing baseline is based on the current day traffic patterns at the airport and considers the implementation of CAP 1781 RNAV substitutions over the appraisal period in the future. However, the sponsor states that this will not result in changes to aircraft behaviours. The ‘do minimum’ baseline presented in the submission is equivalent to the RNAV replication of current procedures and is considered as a design option rather than a baseline. For each option, the Initial Options Appraisal includes qualitative assessments (supported by some numerical data) of the environmental impacts in five ways, noise, air quality, greenhouse gas emissions, tranquillity and biodiversity. Detailed quantified assessments will be provided at Stage 3. Each option assessed in the initial options appraisal is assessed with respect to a dozen criteria, and a summary of the benefits and costs is provided. <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 1.1.3 | Has the sponsor stated on what criteria the comprehensive list of viable options has been assessed? | Yes, a list of the criteria is contained in section 2.4 of the options assessment. <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? | In the IOA main text, section 4.3, the Sponsor indicates where it has rejected options. In its Summary of Analysis in the IOA table, the Sponsor indicates why the option has been discounted. <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

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| 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 indicated its Preferred options for each of the runway configurations in the table in section 4.3 of the IOA main text. | <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)? | The Sponsor has updated the change request to provide a thorough evidence gathering plan in section 8 of the IOA. This action is therefore completed. | <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. There could be a case for considering the impacts, if any, of the various options on travelling time, though this is not included in the specific requirements under CAP1616. | <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 | | |

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|-------|---|----------------|-------------|--|-----------|
| | - 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 |
| | Greenhouse gas impact | | X | | |
| | Capacity and resilience | | X | | |
| | Tranquility | | X | | |
| | Biodiversity | | X | | |
| 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. | | | <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| | No the ATC impacts identified are limited but increased development and operational costs | | | | |
| 2.3 | Where impacts have been monetised, what is the overall value (expressed in net present value (NPV)) of the project? | | | | |
| | The sponsor has not monetised any impacts. The Sponsor states that it will conduct such monetisation and quantification in Stage 3. | | | | |
| 2.4 | Has the sponsor provided an accurate and proportionate assessment of the proposed airspace change impacts? | | | <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | |
| | Overall, the assessment of the proposed airspace change impacts seems accurate and proportionate. | | | | |

| 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? | | | <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 |
| 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: | | |
| | These impacts are presumably included in the Options Assessment under the heading “Capacity”, though the Sponsor could make it considerably more explicit which elements of capacity it has assessed. | | |
| 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] Has the sponsor explained the methodology adopted to reach its input and analysis results? [B11 and E11] | | <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| | <p>The sponsor has not provided any traffic forecasts at this stage, these will be provided at Stage 3. The sponsor only states that during the 10-year period, traffic is expected to increase by one-third as compared to 2019, with most growth occurring at day.</p> <p>The sponsor has explained that the methodology used for the overflight assessment is based on CAP1498. The modal tracks and radar vectoring area are based on radar data collected during the 92-day summer period in 2019. Population figures are based on CACI database using 2021 census, residential figures are based on OS AddressBase data and housing data has been referenced from CBRE’s five-year housing plans. DEFRA’s Magic Maps have been used to identify EU Protected Sites, AQMAs, AONBs and NPs.</p> <p>The Sponsor has updated the change request to provide a thorough evidence gathering plan in section 8 of the IOA. This action is therefore completed.</p> | | <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 3.3 | <p>Has the sponsor developed an assessment of the following environmental aspects?</p> <p>The sponsor has developed a qualitative assessment supported by overflight modelling to represent the number of</p> | | <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

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| | people, AQMAs, AONBs and NPs overflowed by the different design options. Overflight and track mileage have been used proxies for representing noise and GHG/CO2 emissions impacts respectively. | | | | |
| | | Not applicable | Qualitative | Quantified | Monetised |
| 3.3.1 | Noise | | X | | |
| 3.3.2 | Operational diagrams | X | | | |
| 3.3.3 | Overflight | | X | 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) | | | | |
| | According to the Sponsor, it will undertake this analysis as part of Stage 3. According to paragraph 2.3 of the IOA, "More information regarding these metrics shall be provided during the FOA at Stage 3." | | | | |

| 4. Economic Indicators of the ACP | | Status |
|-----------------------------------|--|--------|
| 4.1 | <p>What are the qualitative / strategic impacts described in the ACP?</p> <p>According to the options appraisal:</p> <p>"The introduction of PBN is expected to deliver economic benefits by increasing airspace capacity which in turn will lead to more predictable flight paths and fewer delays (both in the air or on the ground). This is expected to facilitate economic benefit by potentially increasing the frequency of air transport movements, increasing passenger numbers and increasing air cargo tonnage carried". In addition the preferred options cause lower fuel burn, though this is not explicitly stated as an economic benefit.</p> | |
| 4.2 | <p>What is the overall monetised and non-monetised (quantified) impact of the proposed airspace change?</p> <p>Not supplied, but promised for Stage 3.</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</p> | |

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| | options? [E44] Not supplied, but promised for Stage 3. |
| 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 (see above) |
| 4.4 | Have the sponsors provided reasonable justification for the proportionality of analysis above? N/A (see above) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

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| 5. Other aspects | |
| 5.1 | N/A |

| 6. Summary of the Initial Options Appraisal & Conclusions | | |
|--|--|-----------------|
| 6.1 | The Sponsor has provided a comprehensive assessment of the shortlisted options explored. | |
| Outstanding issues | | |
| Serial | Issue | Action required |
| 1 | Nil | |
| 2 | | |
| 3 | | |
| 4 | | |

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| 5 | | |
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| CAA Initial Options Appraisal Completed by | Name | Signature | Date |
|--|------------|------------|------------|
| Airspace Regulator (Economist) | [REDACTED] | [REDACTED] | 30/03/2023 |
| Airspace Regulator (Environmental) | [REDACTED] | [REDACTED] | 29/03/2023 |