Stage 2
DPE Criteria Change

Bournemouth Airport FASI(S) ACP

ACP-2019-43

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Introduction

Bournemouth Airport is in the process of redesigning the arrival and departure routes as part of a nationwide programme of airspace modernisation.

This Airspace Change Proposal (ACP) is part of the Government's Airspace Modernisation programme and follows the CAA's CAP 1616 process. There are 20 other airports and NATS involved in the wider programme (FASI-South).

Bournemouth Airport is responsible for redesigning their routes up to 7000ft.

Introduction
Stage 1 – Design Principles

Stage 1: Bournemouth Airport began their ACP in September 2021 and subsequently passed through the Stage 1 Gateway of the CAP 1616 process in October 2022. The Stage 1 documentation can be found on the ACP Portal: Bournemouth FASI (ACP-2019-43)..

Bournemouth Airport completed the activities associated with Step 1 of the process and produced a Statement of Need and developed a set of design principles in conjunction with stakeholders .

Bournemouth Airport's Statement of Need (SoN) states:

"As part of the Airspace Modernisation Strategy for the south of England, Bournemouth Airport believe it is necessary to look to redesign the Airspace, to facilitate revised departure and arrival routes, in association with the FASI-South Programme; linking with other key airports identified in the Programme, to modernise the overall airspace structure and route network."

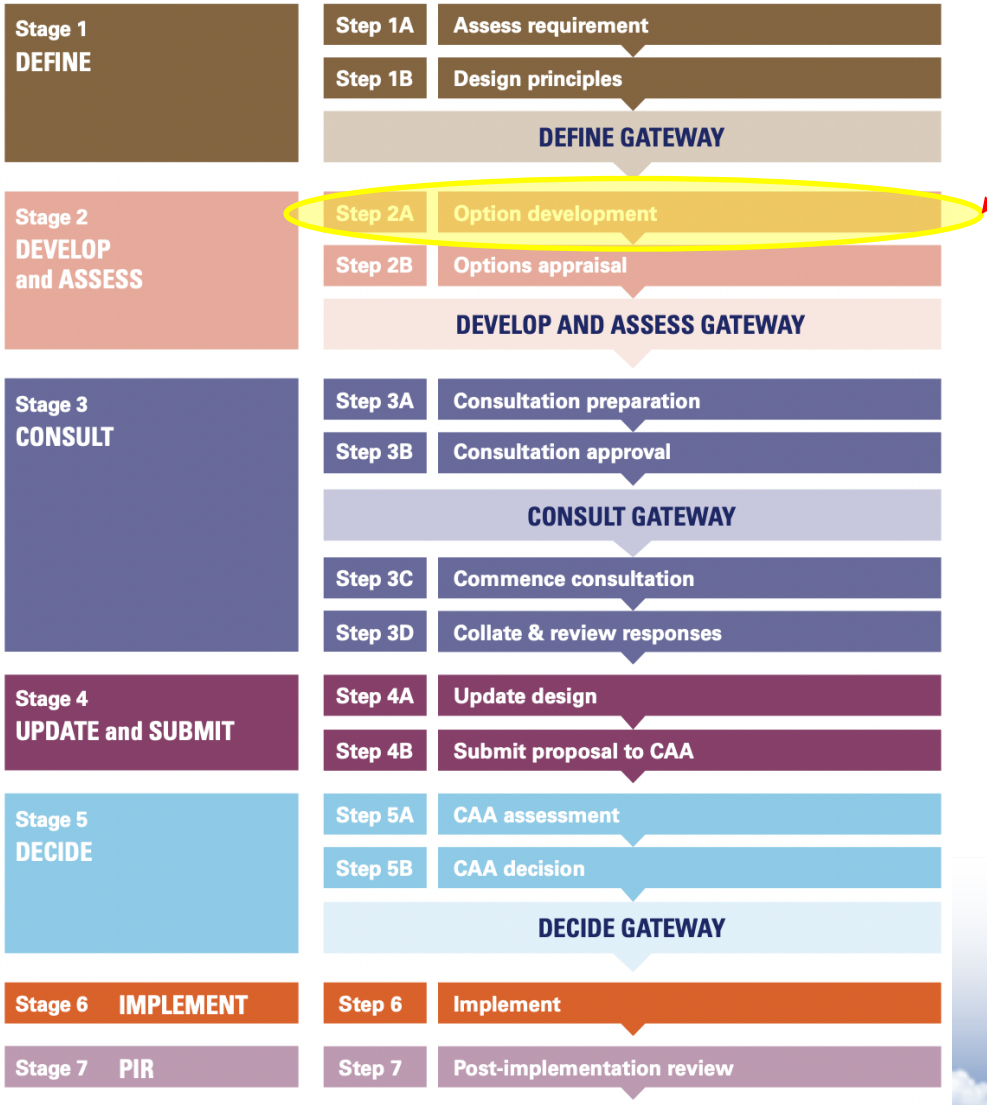
All documents relating to this ACP, including progress, can be found on the ACP Portal:

Airspace change proposal public view (caa.co.uk)

Design Principles

Design Principle Number & Title	Description
1- Safety	The airspace design and its operation must maintain or, where possible enhance, current levels of safety.
2- Overflight	The new procedures should not increase the number of people overflown by aircraft using the Airport.
3- Noise Footprint	The design should limit, and where practicable reduce, the impact of noise to stakeholders on the ground, in line with the Bournemouth Airport Noise Action Plan and, where possible, periods of built-in respite should be considered.
4- Tranquillity	Where practical, route designs should limit effects upon sensitive areas. These may include cultural or historic assets, tranquil or rural areas, sites of care or education and AONB's.
5- Emissions and Air Quality	The proposed design should minimise CO_2 emissions per flight.
6- Airspace Dimensions	The volume and classification of controlled airspace required for Bournemouth Airport should afford the appropriate volume to contain and support commercial air transport for both runways, enabling safe, efficient airspace design which considers the needs of all airspace users.
7- Airspace Complexity	The airspace design should seek to reduce complexity and bottlenecks in controlled and uncontrolled airspace and contribute to a reduction in airspace infringements.
8- Technical Requirements	The design shall be acceptably compliant with PANS-OPS and UK CAA criteria to meet the technical capability requirements of aircraft using the airport.
9- Systemisation	The arrival transitions and departure procedures shall be deconflicted and integrate with the en-route network and Southampton Airport, as per the FASI(S) programme. Arrival transitions shall integrate with the Instrument Approach Procedures (IAPs) reducing the requirement for tactical coordination.
10- Independence	Where possible, the new procedures and airspace configuration should enable Bournemouth Airport to access controlled airspace independently of service provision from the Southampton Radar service.
11- Operational Cost	Provided it does not have an adverse impact to community disturbance and other airspace users, procedures should be designed to optimise fuel efficiency.
12- AMS Realisation	This ACP must serve to further, and not conflict with, the realisation of the AMS.
13- PBN	The new procedures should capitalise on as many of the potential benefits of PBN implementation as are practicable.

CAP1616 Process



We are here

Stage 2: Options Development
BOH Progress

Bournemouth Airport has held two stakeholder engagement rounds:

November 2022 - The purpose was to introduce stakeholders to the airspace design options and explain how they are assessed against the Design Principles.

November 2023 – The purpose was to introduce the reassessed baselines and ask for feedback regarding the design option envelopes.

Survey forms were sent to all stakeholders following all information sessions.

Feedback from these surveys, and additional email replies have been used to inform our Design Principle Evaluation.

As a result of feedback from the CAA to another change sponsor, it was noted that the assessment criteria methodology for the Design Principle Evaluation incorrectly assessed the options against the baseline rather than the options against the specific wording of each Design Principle. These criteria have now been changed and explained in this presentation.

Overview of Presentation

Firstly, the newly developed Design Principle Evaluation (DPE) criteria is described alongside the old criteria with further explanations for each of the 13 Design Principles (slides 32-45).

Finally, DPE criteria change examples are provided; this gives examples using one departure option and one arrival option to demonstrate how the new criteria has impacted the assessment.

Design Principle Evaluation Criteria

The following slides show the old and new assessment criteria for each Design Principle, with an explanation of what has changed and how that has affected the outcome of the evaluation.

All the options have been reassessed against the new criteria for accuracy and consistency.

The full Design Principle Evaluations will be available on the ACP portal once this ACP has been submitted in November 2024.

DP1 - Safety

DP#	Design Principle	Qualitative Assessment	
DP1	**Safety –** The airspace design and its operation must maintain or, where possible enhance, current levels of safety.	Initial qualitative assessment to determine any potential safety concerns. A more detailed assessment will be conducted in Stage 2B in the IOA Section Safety Assurance	
Old Criteria	**No safety concerns**	**Work needed to make safe**	**Unsafe**
New Criteria	**Fully Met:** No safety issues identified.	**Partially Met:** Issues identified that would require a more robust safety argument than today's operation.	**Not Met:** Issues identified that are unlikely to be overcome without prohibitively restrictive safety mitigations.

Explanation-

Minor changes to the criteria wording with no impact on the assessment outcome.

DP2 - Overflight

DP#	Design Principle	Qualitative Assessment
DP2	**Overflight**- The new procedures should not increase the number of people overflown by aircraft using the Airport.	High level qualitative assessment of people overflown, utilising population density maps and identifying new areas affected. A more detailed assessment will be conducted in Stage 2B in the IOA section 'Noise impact on health and quality of life'

Old Criteria	**No different to today or less people overflown**	**Different not necessarily more**	**More AND different**
New Criteria	**Fully Met:** Limits or has the potential to reduce the number of people overflown.	**Partially Met:** Number of people overflown is broadly similar but could be different communities to today.	**Not Met:** Has the potential to increase the number of people overflown.

Explanation-

We are now able to show where an option may be an improvement from today's operation. Previously options were assessed as fully meeting the criteria if it was 'no different to today or less'. With the new criteria, options are assessed as fully meeting the criteria only if there is likely to be a reduction, and partially meeting the criteria if there is minimal change.

DP3 - Noise

DP#	Design Principle		Qualitative Assessment
DP3	**Noise Footprint** – The design should limit, and where practicable reduce, the impact of noise to stakeholders on the ground, in line with the Bournemouth Airport Noise Action Plan and, where possible, periods of built-in respite should be considered.		Initial high level qualitative assessment of noise impact to stakeholders on the ground (approximately 4000ft and below). Noise strategic maps provided. An assessment will be conducted in Stage 2B in the IOA Section 'Noise impact on health and quality of life'.
Old Criteria	**No different to today or less people overflown**	**Different not necessarily more**	**More AND different**
New Criteria	**Fully Met:** Limits or has the potential to reduce overall impacts of aircraft noise.	**Partially Met:** Impacts of aircraft noise likely to be broadly similar in terms of the number of people affected, new or different communities may be affected.	**Not Met:** Has the potential to increase the overall impacts of aircraft noise on local communities.

Explanation-

We are now able to show where an option may be an improvement from today's operation. Previously options were assessed as fully meeting the criteria if it was 'no different to today or less'. With the new criteria, options are assessed as fully meeting the criteria only if there is likely to be a reduction, and partially meeting the criteria if there is minimal change.

DP4 – Tranquillity

DP#	Design Principle	Qualitative Assessment	
DP4	**Tranquillity -** Where practical, route designs should limit effects upon sensitive areas. These may include cultural or historic assets, tranquil or rural areas, sites of care or education and AONB's.	Initial high level qualitative assessment. A more detailed assessment will be conducted in Stage 2B in the IOA sections 'Tranquillity' and 'Biodiversity'. Reference to sites of care or education, cultural or historic assets have not been included at this stage due to the 'swathe approach' covering too large an area to be useful when assessing individual sites– these will be fully assessed later in the options appraisal stages when the swathes are refined to more precise routes - 'lines on the map'.	
Old Criteria	**No different to today or AONB or NP overflown**	**Different not necessarily more of the AONB or NP overflown**	**More AND different volume of AONB or NP, overflown**
New Criteria	**Fully Met:** Limits effects on Noise Sensitive Areas and does not result in any overflight of a AONB or a NP below 7000ft.	**Partially Met:** May result in overflight of a portion of an AONB or a NP, also may result in overflight of tranquil areas important to local communities such as reservoirs or parks.	**Not Met:** Results in direct and significant overflight of AONBs or NPs and/or various tranquil areas important to local communities.

Explanation-

Reference to today's operation has been removed from the assessment criteria as this is not relevant to the wording of the DP. The impact of the options on sites of tranquillity is individual to each option and assessed as such.

DP5 – Emissions and Air Quality

DP#	Design Principle	Qualitative Assessment	
DP5	**Emissions and Air Quality** – The proposed design should minimise CO_2 emissions per flight.	Initial high level qualitative assessment. A further assessment will be conducted in Stage 2B in the IOA Sections 'Greenhouse gas impact' and 'Fuel burn'.	
Old Criteria	**No different or less than today**	**Different and more**	**Extra track miles - significantly more than baseline**
New Criteria	**Fully Met:** Has potential to minimise CO2 emissions.	**Partially Met:** CO2 emissions likely to be the same or similar to today's operation.	**Not Met:** Has the potential to increase CO2 emissions.

Explanation-

We are now able to show where an option may be an improvement from today's operation. Previously options were assessed as fully meeting the criteria if it was 'no different to today or less'. With the new criteria, options are assessed as fully meeting the criteria only if there is likely to be a reduction, and partially meeting the criteria if there is minimal change.

DP6 – Airspace Dimensions

DP#	Design Principle		Qualitative Assessment
DP6	**Airspace Dimensions** – The volume and classification of controlled airspace required for Bournemouth Airport should afford the appropriate volume to contain and support commercial air transport for both runways, enabling safe, efficient airspace design which considers the needs of all airspace users.		High level qualitative assessment of the airspace required for each option. A more detailed assessment will be conducted in Stage 2B in the IOA section 'Access'. This DP will also be assessed more thoroughly in Stage 3 when the options are refined to give more precise routes.
Old Criteria	**Contained within existing controlled airspace**	**Would require more controlled airspace- but the minimum necessary**	**Significant new volume of controlled airspace required (minimum necessary)**
New Criteria	**Fully Met:** Allows for either a reduction in the volume of CAS required or does not require any additional CAS.	**Partially Met:** May require more controlled airspace but the minimum necessary.	**Not Met:** Significant additional volumes of CAS are required to contain the proposed option.

Explanation-

The assessment criteria has been rewritten to be more representative of the DP wording. There has been minimal changes to the assessment of the options.

DP7 – Airspace Complexity

DP#	Design Principle	Qualitative Assessment	
DP7	**Airspace Complexity** – The airspace design should seek to reduce complexity and bottlenecks in controlled and uncontrolled airspace and contribute to a reduction in airspace infringements.	High level qualitative assessment on the airspace complexity of the swathe. Further assessment will be conducted in Stage 2B in the IOA section 'Capacity/resilience'.	
Old Criteria	**No worse or different to today**	**Potential for more complexity**	**Notable increase in complexity**
New Criteria	**Fully Met:** Does not result in a complex CTA/CTR configuration with numerous different base levels likely to lead to inadvertent CAS penetrations.	**Partially Met:** Results in changes to the CAS configuration that may cause other aviators some minor challenges.	**Not Met:** Results in a highly complex CAS configuration.

Explanation-

The assessment criteria has been rewritten to be more representative of the DP wording. There has been minimal changes to the assessment of the options.

DP8 – Technical Requirements

DP#	Design Principle		Qualitative Assessment
DP8	**Technical Requirements** – The design shall be acceptably compliant with PANS-OPS and UK CAA criteria to meet the technical capability requirements of aircraft using the airport.		High level qualitative assessment of whether the options meet the technical requirements of all airspace users including aircraft types, equipment and performance. This DP will also be assessed more thoroughly in Stage 3 when the options are refined to give more precise routes.
Old Criteria	**Fully**	**Partially**	**Marked increase in complexity**
New Criteria	**Fully Met:** Meets the technical requirements of almost all airport operators.	**Partially Met:** Meets the technical requirements of most airport operators.	**Not Met:** Does not meet the technical requirements of airport operators.

Explanation-

The assessment criteria has been rewritten to be more representative of the DP wording. Previously this DP was not fully assessed as it was deemed all options would fully meet the criteria at this stage as there would be somewhere within each swathe with a compliant route. The options have now been reassessed.

DP9 - Systemisation

DP#	Design Principle		Qualitative Assessment
DP9	**Systemisation -** The arrival transitions and departure procedures shall be deconflicted and integrate with the en-route network and Southampton Airport, as per the FASI(S) programme. Arrival transitions shall integrate with the Instrument Approach Procedures (IAPs) reducing the requirement for tactical coordination.		Initial high level qualitative assessment of the systemisation potential of the swathe. Further assessment will be conducted in Stage 2B in the IOA section 'Capacity/resilience'.
Old Criteria	**No current conflicts**	**Possibility of resolvable conflicts**	**Unable to be separated from other interdependent airports current procedures**
New Criteria	**Fully Met:** Integrates with the en-route network and is likely to reduce the need for tactical coordination and vectoring within the CTA/CTR.	**Partially Met:** Integrates with the en-route network but may not reduce the need for tactical coordination and vectoring within the CTA/CTR.	**Not Met:** Does not integrate with the en-route network and will not decrease the need for tactical coordination and vectoring within the CTA/CTR.

Explanation-

The assessment criteria has been rewritten to be more representative of the DP wording. There has been minimal changes to the assessment of the options.

DP10 - Independence

DP#	Design Principle		Qualitative Assessment
DP10	**Independence -** Where possible, the new procedures and airspace configuration should enable Bournemouth Airport to access controlled airspace independently of service provision from the Southampton Radar service.		Qualitative assessment at this stage, further consideration in the IOA general Aviation, Access, and Impact from increased effective capacity. A more detailed analysis will be carried out in stage 3 of this ACP
Old Criteria	**Better than the current situation**	**The same as the current situation, i.e. service provision still required from SOU radar**	**Worse than the current situation**
New Criteria	**Fully Met:** Allows for access to controlled airspace independently of Southampton Radar service	**Partially Met:** The same as the current situation, i.e. service provision still required from SOU radar	**Not Met:** Greater service provision from Southampton Radar service would be required

Explanation-

The assessment criteria has been rewritten to be more representative of the DP wording. There has been minimal changes to the assessment of the options.

DP11 – Operational Cost

DP#	Design Principle		Qualitative Assessment
DP11	**Operational Cost** - Provided it does not have an adverse impact to community disturbance and other airspace users, procedures should be designed to optimise fuel efficiency.		Assessed similarly to DP5 - Emissions and Air Quality, more track miles will incur more fuel cost. Initial high level qualitative assessment. Further assessment relating to this DP will be conducted in Stage 2B in the IOA section 'Fuel burn'.
Old Criteria	**No different or less than today**	**More than today but could be trade-offs with other benefits**	**Significantly more than today with little or no trade-offs**
New Criteria	**Fully Met:** Fuel efficiency is optimal without an adverse impact on local communities.	**Partially Met:** Fuel efficiency is optimal however there is some impact on local communities.	**Not Met**: Fuel efficiency not optimised.

Explanation-

The assessment criteria has been rewritten to be more representative of the DP wording. There has been minimal changes to the assessment of the options.

DP12 – AMS Realisation

DP#	Design Principle		Qualitative Assessment
DP12	**AMS Realisation** – This ACP must serve to further, and not conflict with, the realisation of the AMS.		Initial high level qualitative assessment on whether the swathe aligns with the strategic objectives of the AMS. Where an option meets the AMS objective but does not provide any improvement from today then this has been noted in the assessment.
Old Criteria	**Fully**	**Partially**	**Not Met**
New Criteria	**Fully Met:** Aligned with the AMS.	**Partially Met:** Partially aligned with the AMS.	**Not Met:** Not aligned with the AMS.

Explanation-

The assessment criteria has been rewritten to be more representative of the DP wording. Previously this DP was not fully assessed as it was deemed all options would fully meet the criteria at this stage as there would be somewhere within each swathe with a compliant route. The options have now been reassessed against the AMS indicators.

DP13 - PBN

DP#	Design Principle		Qualitative Assessment
DP13	**PBN** – The new procedures should capitalise on as many of the potential benefits of PBN implementation as are practicable.		Initial high level qualitative assessment on whether the options for routes will utilise PBN and its benefits, e.g. simplifying route integration, more direct routes and less track mileage.
Old Criteria	**Fully**	**Partially**	**Not Met**
New Criteria	**Fully Met:** Fully compliant with the latest navigational standards.	**Partially Met:** Some PBN benefits utilised but potential to not be fully compliant.	**Not Met:** PBN not utilised.

Explanation-

The assessment criteria has been rewritten to be more representative of the DP wording. Previously this DP was not fully assessed as it was deemed all options would fully meet the criteria at this stage as there would be somewhere within each swathe with a compliant route. The options have now been reassessed.

Design Principle Evaluation Criteria Change Examples

The following slides show a **few worked examples** to highlight the results of the changes.

They include the qualitative assessment of each DP and then three columns of RAG scores.

The first shows the RAG score following Bournemouth Airports initial assessment.

The second shows feedback following the initial round of engagement and feedback in 2023.

The third shows the RAG score following the recent reassessment of all the options following on from the changes to the assessment criteria.

Departure Option D08-NE-A

08-NE-A	Design Principle	Qualitative Assessment	BOH Eval.	Post Feedback	New Eval Criteria
1	**Safety**	Additional controlled airspace and amendments to the current FUA may be required depending on final route placements within this swathe, if this is not possible then there would be safety ramifications for the route transiting uncontrolled airspace.			
2	**Overflight**	There would be no increase in the number of people overflown with this option although different communities will be overflown.			
3	**Noise Footprint**	There would be no increased noise impact with this option. Assessed as amber as different communities overflown.			
4	**Tranquillity**	This option would see traffic overflying a greater and more tranquil area of the New Forest National Park.			
5	**Emissions and Air Quality**	There would be an increase in emissions and air quality with this option as aircraft initially would turn north.			
6	**Airspace Dimensions**	Additional controlled airspace and amendments to the current FUA may be required depending on final route placements within this swathe.			
7	**Airspace Complexity**	This option could help to reduce complexity as it moves traffic further north, away from Southampton Airport and the congested area around SAM.			
8	**Technical Requirements**	Assessed as being fully met due to the design being fully compliant with PANS-OPS and UK CAA criteria meeting the technical capability requirements of all aircraft using the airport.			
9	**Systemisation**	This option could help improve systemisation as it moves traffic further north, away from Southampton Airport and the congested area surrounding it associated with the LTMA traffic.			
10	**Independence**	This option has the potential to deconflict routes from Southampton Airport and Solent Radar.			
11	**Operational Cost**	Fuel efficiency is expected to be optimal without an adverse impact on local communities			
12	**AMS Realisation**	Assessed as partially met as does not meet all of the safety, simplification, reducing complexity and improving efficiency objectives. Additionally, no improvement is expected for the environmental sustainability objectives.			
13	**PBN**	Assessed as partially met as this design should capitalise on the benefits of PBN, enhancing navigational adherence but does not make airspace usage more efficient.			

Departure Option D26-E-A

26-E-A	Design Principle	Qualitative Assessment	BOH Eval.	Post Feedback	New Eval. Criteria
1	**Safety**	Additional controlled airspace and amendments to the current FUA may be required depending on final route placements within this swathe, if this is not possible then there would be safety ramifications for the route transiting uncontrolled airspace.			
2	**Overflight**	There would be no increase in the number of people overflown however the communities overflown would be different with this option from the baseline option.			
3	**Noise Footprint**	Number of people overflown is expected to be similar but would be different communities to today.			
4	**Tranquillity**	This option would see traffic overflying a different and more tranquil area of the New Forest National Park, a larger portion of the AONB could also be overflown.			
5	**Emissions and Air Quality**	An increase in emissions is expected due to increased fuel consumption. No anticipated impact on air quality.			
6	**Airspace Dimensions**	Additional controlled airspace and amendments to the current FUA may be required depending on final route placements within this swathe.			
7	**Airspace Complexity**	This option could help to reduce complexity as it moves traffic further north, away from Southampton Airport and the congested area around SAM.			
8	**Technical Requirements**	Assessed as being fully met due to the design being fully compliant with PANS-OPS and UK CAA criteria meeting the technical capability requirements of all aircraft using the airport.			
9	**Systemisation**	This option could help improve systemisation as it moves traffic further north, away from Southampton Airport and the congested area surrounding it associated with the LTMA traffic.			
10	**Independence**	This option has the potential to deconflict routes from Southampton Airport and Solent Radar.			
11	**Operational Cost**	An increase in fuel use is expected with this option.			
12	**AMS Realisation**	Assessed as partially met as does not meet all of the safety, simplification, reducing complexity and improving efficiency objectives. Additionally, no improvement is expected for the environmental sustainability objectives.			
13	**PBN**	Assessed as partially met as this design should capitalise on the benefits of PBN, enhancing navigational adherence but does not make airspace usage more efficient			

Arrival Option A26-NW-A

A26-NW-A	Design Principle	Qualitative Assessment	BOH Eval.	Post Feedback	New Eval. Criteria
1	**Safety**	Depending on final track placement, this option could see penetration of danger areas EG D122. Additional controlled airspace and amendments to the current FUA may be required depending on final route placements within this swathe, if this is not possible then there would be safety ramifications for the route transiting uncontrolled airspace.			
2	**Overflight**	As there are currently no routes departing to the west of the airport there would be an increase in the number of people overflown, although the area to the north of the airport is much less densely populated than the area to the south.			
3	**Noise Footprint**	As there are currently no routes departing to the west of the airport there would be an increased noise impact, although the area to the north of the airport is much less densely populated than the area to the south.			
4	**Tranquillity**	This option would see traffic overfly the New Forest National Park and CCAONB.			
5	**Emissions and Air Quality**	This option would mean extra track miles for any westbound departures.			
6	**Airspace Dimensions**	Additional controlled airspace and amendments to the current FUA would be required with this option, impacting on current GA traffic			
7	**Airspace Complexity**	This option would increase complexity as there is currently no connectivity to the route network in this direction.			
8	**Technical Requirements**	Assessed as being fully met due to the design being fully compliant with PANS-OPS and UK CAA criteria meeting the technical capability requirements of all aircraft using the airport.			
9	**Systemisation**	As there is currently no connectivity to the route network in this direction, there would be no systemisation benefits associated with this option.			
10	**Independence**	This option has the potential to deconflict routes from Southampton Airport and Solent Radar.			
11	**Operational Cost**	This option would mean extra track miles for any westbound departures.			
12	**AMS Realisation**	Assessed as not met as fails to achieve any of the AMS objectives.			
13	**PBN** .	Assessed as partially met as this design should capitalise on the benefits of PBN, enhancing navigational adherence but does not make airspace usage more efficient			

Feedback

There is no requirement to provide feedback.

This is simply an update of some changes we have made since the Design Options and Design Principle Evaluations were first shown to you.

However, should you wish to provide feedback or comment, please respond to the email with your views by 25th October 2024.

Thank you for your time.