Airspace Change Proposal
Stage 2b

Initial Options Appraisal

Bournemouth Airport FASI-S
ACP-2019-43

08 November 2024

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Issue	Change Reference	Date	Details
1.0	Initial Issue	08 November 2024	Initial Issue

Executive Summary

The Civil Aviation Authority wrote to twenty-one airports in the Southeast of England, including Bournemouth Airport, to advise them that it is essential they participate in a programme of Airspace Modernisation. This programme consists of a coordinated attempt to improve the efficiency of airspace usage across the region, whilst implementing the latest technology. It aims to reduce the environmental impacts associated with aviation.

Bournemouth Airport passed the Civil Aviation Authority CAP 1616 Stage 1 Gateway in October 2022 and commenced Stage 2 activities. A comprehensive list of options was developed through internal workshops and stakeholder engagement. These options were assessed against the Design Principles developed during Stage 1 of the ACP process.

This document is our Stage 2B Initial Options Appraisal submission. It is a high-level qualitative appraisal of the options we developed during Stage 2A. This document covers the options for assessment, methodology and the Initial Options Appraisal. In the conclusion, we detail the options being progressed to Stage 3 of this Future Airspace Implementation South Airspace Change Proposal.

Abbreviations

Abbreviation	Term	Description
ACOG	Airspace Change Organising Group	
ACP	Airspace Change Proposal	
AMS	Airspace Modernisation Strategy	
ANSP	Air Navigation Service Provider	
AONB	Area of Outstanding Natural Beauty	
AQMA	Air Quality Management Area	
ARINC	Aeronautical Information Regulation and Control	
BOH	Bournemouth airport	
BIA	Bournemouth International airport	
CAA	Civil Aviation Authority	
CAS	Controlled Airspace	
CCO	Continuous Climb Operations	
CDA	Continuous Descent Arrival	
DA	Danger Area	
DFT	Department for Transport	
DEFRA	The Department for Environment, Food and Rural Affairs	
DPE	Design Principle Evaluation	
FASI-S	Future Airspace Implementation South	
Free Flow		Free flow is a method of departure whereby a tower does not have to coordinate the release of individual aircraft.
GA	General Aviation	
GNSS	Global Navigation Satellite Systems	
ICAO	International Civil Aviation Organisation	
IAP	Instrument Approach Procedures	
IOA	Initial Options Appraisal	
LTMA	London Terminal Manoeuvring Area	
NAP	Noise Abatement Procedure	

Abbreviation	Term	Description
NERL	NATS En-Route Limited	
NM	Nautical Mile	
NP	National Park	
NTK	Noise and Track Keeping	Taken over a busy period in 2019- pre pandemic.
ONS	Office for National Statistics	
PBN	Performance-Based Navigation	
PWC	Population Weighted Centroids	Using population-weighted rather than traditional geometric centroids can result in maps with symbol placement that better reflects the underlying population characteristics of a place.
RAG	Red, Amber, Green	
Ramsar		Wetlands of international importance designated under the Ramsar Convention.
RNAV	Area Navigation	
RWY	Runway	
SAC	Special Areas of Conservation	
SID	Standard Instrument Departures	
SOU	Southampton airport	
SPA	Special Protection Area	
SSSI	Sites of Special Scientific interest	
STAR	Standard Arrival	
UK	United Kingdom	
VOR	VHF Omni-Directional Radio Range	

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1. Introduction

1.1. Overview

1.1.1. Bournemouth Airport (BOH) is in the process of completing the Airspace Change Proposal (ACP) for the Future Airspace Implementation South (FASI-S) programme which is part of the Airspace Modernisation Strategy (AMS). The purpose of which is to improve airports' arrival and departure routes and associated airspace structures.

1.1.2. This document, (Step 2B), forms part of the ACP process and should be read in conjunction with the Options Development and Design Principle Evaluation document (Step 2A).

1.1.3. The Step 2A document provides a comprehensive overview of AMS, BOH's progress so far, and the Airspace Change Masterplan and how BOH fits into this. Furthermore, it explains the Design Principles developed at Stage 1, provides an account of how options were developed and provides an assessment of the Design Principles against each of the options. The latter was done with a series of stakeholder engagements.

1.1.4. Following the Design Principle Evaluation (DPE) stage, twenty options were discounted. These options were departures to and arrivals from the northwest for both runways. This decision was made as there is no connectivity to/from the enroute network, insufficient Controlled Airspace (CAS) and no business or operator requirement for Standard Instrument Departures (SIDs) and Standard Arrival procedures (STARs) in this direction[1].

1.1.5. Step 2B requires the change sponsor to conduct an Initial Options Appraisal (IOA) on the options described in Step 2A. This Initial Options Appraisal is the subject of this report.

1.1.6. The report is one of a set of documents submitted to the CAA at Gateway 2 of the CAP1616 process. The submitted documents are available on the Airspace Change Portal and comprise of:

- Options Development and Design Principle Evaluation, Stage 2A;
- Initial Options Appraisal, Stage 2B;
- Supporting material, such as stakeholder engagement presentations and surveys.

1.1.7. The report begins with a brief description of the purpose and scope of the options Appraisal process, information regarding Performance-Based Navigation (PBN) objectives as part of the AMS and some further important context regarding Bournemouth Airport. This is followed by sections that look at the options for appraisal and the Initial Options Appraisal (IOA) for each option. Finally, this report presents the results of the IOA for each design envelope for both runways, departures, and arrivals. The latter is a Red Amber Green (RAG) assessment against each of the impacts assessed in the IOA and will determine if any options are discounted at this stage.

[1] For more information see Options Development and Design Principle Evaluation Section 8, available on the ACP Portal.

1.2. Purpose and Scope

1.2.1. As part of the ACP CAP1616 process, BOH is required to complete a formal options appraisal process that assesses the benefits of the conceptual route options compared to a baseline scenario. The Step 2B requirement is to determine the relevant high-level criteria and then conduct a qualitative assessment against each of the conceptual route options. This IOA serves as the foundation for a more quantitatively oriented assessment later in the ACP CAP1616 process.

1.2.2. In addition to comparing options against the baseline, BOH are required to assess the potential costs and benefits of each conceptual option. This includes, but is not limited to, safety, noise impact, air quality, emissions, environmental considerations, efficiency, and access for other airspace users [2].

1.3. Performance-Based Navigation

1.3.1. One of the major aims of the AMS is to optimise future airspace designs to take account of modern aircraft performance and functional capabilities and make them more efficient, saving time and fuel and reducing emissions.

1.3.2. The key to achieving this is through the application of Performance-Based Navigation (PBN). In parallel, the UK navigation infrastructure can also be optimised to take advantage of the lateral navigation accuracy from Global Navigation Satellite Systems (GNSS), while retaining adequate conventional ground-based navigation aids to ensure both resilience and contingency measures.

1.3.3. PBN is being adopted world-wide. Airspace will be modernised through International, Regional and State level initiatives, including regulations. It impacts both the high-level airways and the lower-level arrival and departure routes into and out of airports and Instrument Approach Procedures (IAP).

1.3.4. European-wide legislation: Commission Implementing Regulation EU 2018/1048, PBN-IR[3] was developed to drive the deployment of PBN in the European region to meet the international vision laid down by the International Civil Aviation Organisation (ICAO).

1.4. Further Context

1.4.1. BOH has already commenced the modernisation of its airspace having submitted a proposal for the implementation of RNAV Approaches[4]. The Instrument Landing System (ILS) (CAT I) serving RWY 08 is obsolete and needs to be replaced. Unrecoverable failure of the ILS on RWY 08 will have serious operational consequences denying easterly Precision Approaches and increasing dependence on RWY 26. In addition, the FASI(S) programme may result in more requirements for the airport to implement new arrival transitions, to enable aircraft to establish on an IAP.

[2] A guide to expected approach to key analysis for ACPs is in CAP1616 Appendix E, table E2

[3] Commission Implementing Regulation EU 2018/1048, PBN-IR.

[4] Bournemouth Airport RNAV Approaches ACP-2018-40

1.4.2. It is possible that, in the development of options for new departure and arrival profiles for the other airports in the region, the existing airspace configuration may also require re-configuration. This will be managed as part of the FASI(S) programme as all the airports within the cluster progress through the CAP1616 process.

1.5. Options under Appraisal

1.5.1. This section describes the departures and arrivals for both runways. Each sub-section begins with a detailed description of the baseline for each design envelope followed by a brief description of the options with commentary regarding any changes made between the two stakeholder consultations carried out in December 2022 and November 2023.

1.5.2. Images in this section depict the options as swathes (more information can be found in the 'Options Development and Design Principle Evaluation' document on the ACP Portal). All options are illustrated alongside the baseline within each design envelope, over OS map and over the En-route (ENR) chart to 25 Nautical Miles (nm), on the latter danger and restricted areas are also shown. Together, this information helps to inform the evaluation of safety concerns for all options. All images shown over OS maps also depict the Noise Preferential Routes (NPR)[5], these are the blue and yellow shapes. For arrivals, the images are shown over google earth imagery with the RNP T-Bar, this is the white line image which represents the positions of aircraft on final approach to each runway.

1.5.3. Each section begins with a reminder of the options under consideration by runway and by departures and arrivals. All Northwest options have been discounted following the Design Principle Evaluation stage, step 2a, see Section 1.1.4.

1.6. Runway 08 Departures

1.6.1. All options for consideration in this IOA document are detailed in the table below for RWY 08 departures followed by images of the swathes for each design envelope over OS map and en-route charts.

Northeast	East	South
D08-NE-A	**D08-E-C Baseline**	D08-S-A
D08-NE-B Baseline	D08-E-D	**D08-S-B Baseline**

Table 1: 08 Departure options

1.6.2. Northeast Design Envelope

The baseline for the Northeast departures design envelope typically route straight ahead bearing left. The baseline is named D08-NE-B Baseline. The baseline has been established from NTK data, current procedures, and operational expertise. This baseline was established due to new track data from 16th June-15th September 2023, henceforth

[5] Noise Preferential Route is an area surrounding the conventional departure route which is +/– 1.5km. Aircraft are required to remain within this area up to a minimum altitude, usually 4,000ft. See Options Development and DPE document for more information about Bournemouth Airports NPRs.

'summer 2023 data', and first presented to stakeholders as a baseline in November 2023, however in previous stakeholder engagement sessions (December 2022) this baseline was presented as option D08-ESE-A and feedback from the first round of engagement was retained for this new baseline option in step 2a of this ACP [6]. The other option in this design envelope, D08-NE-A, routes farther north than the baseline; this option is the same in both stakeholder engagements in all but name, formerly named D08-ESE-A.

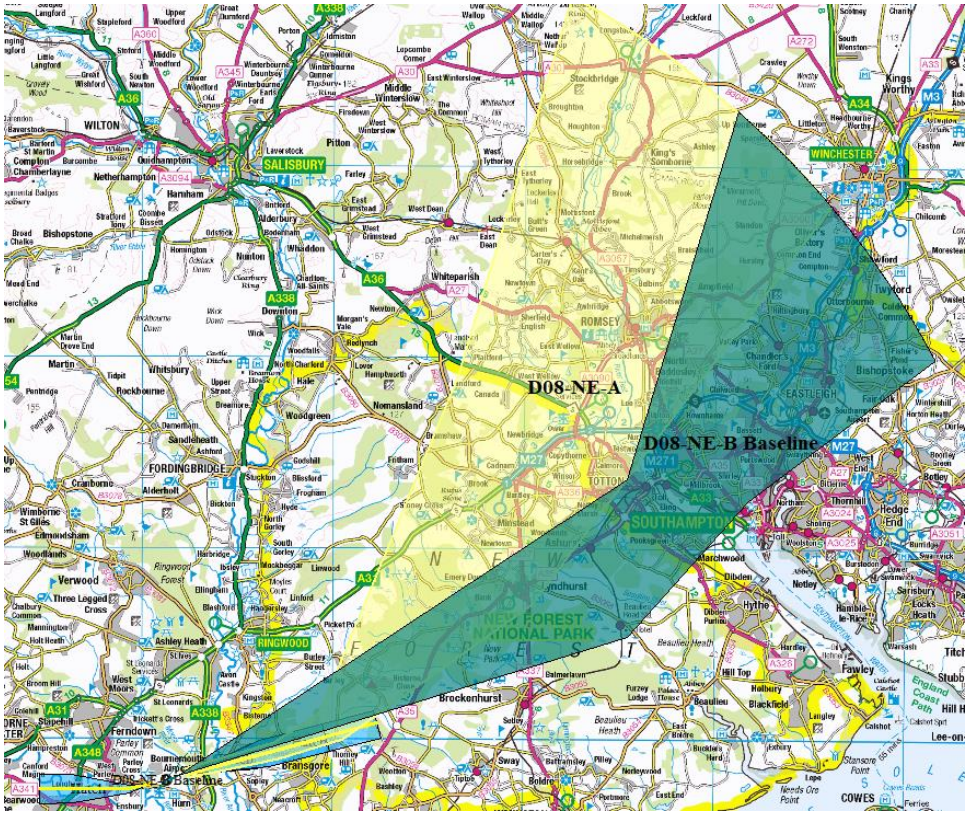


Figure 1: Northeast Design Envelope 08 Departures over OS map

[6] See Options Development and Design Principle Evaluation document, Step 2a.

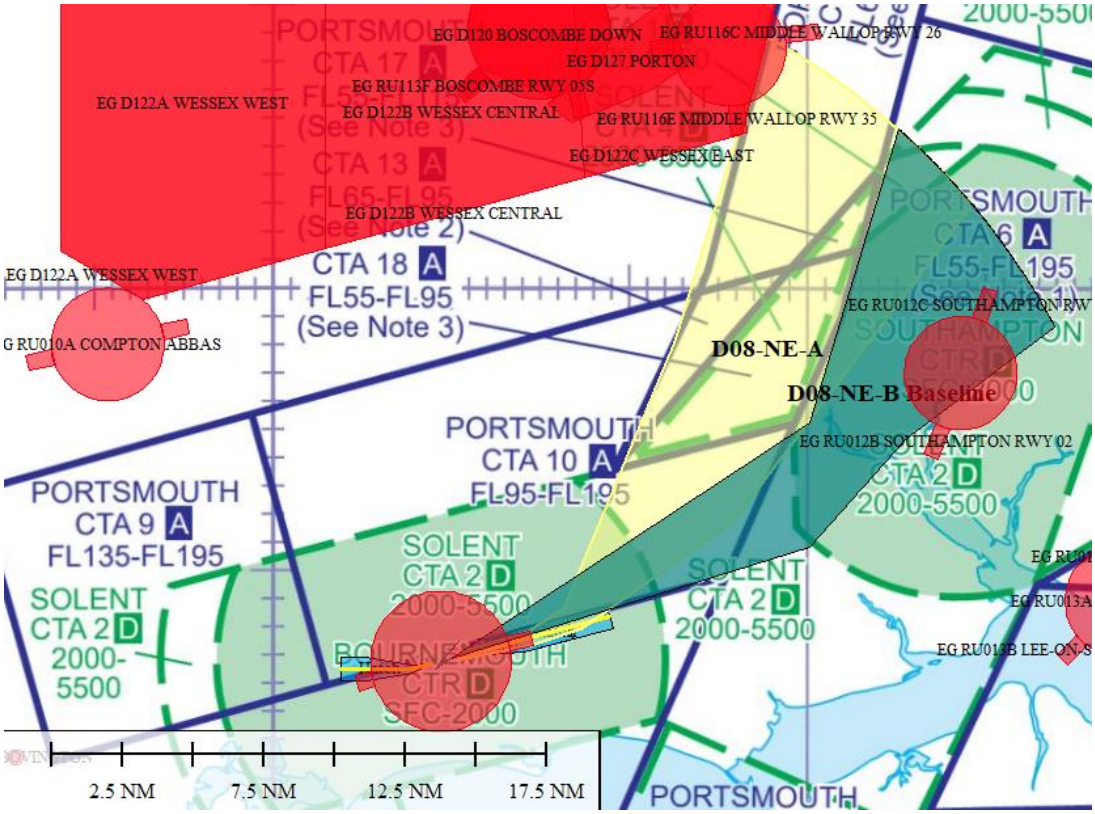


Figure 2: Northeast Design Envelope 08 Departures over ENR chart.

1.6.3. East Design Envelope

The baseline for the East departures design envelope typically route straight ahead to the east. The baseline is named D08-E-C Baseline. The baseline has been established from NTK data, current procedures, and operational expertise. This baseline and the option D08-E-D are the same for both stakeholder engagements in December 2022 and November 2023, however the design envelope has been renamed East rather than East Southeast.

Figure 3: East Design Envelope 08 Departures over OS map.

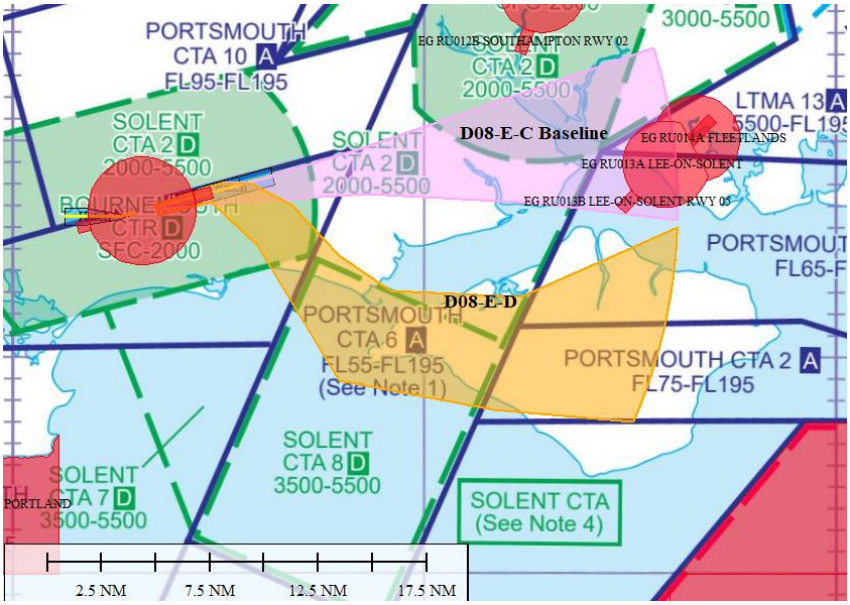


Figure 4: East Design Envelope 08 Departures over ENR chart.

1.6.4. South Design Envelope

The baseline for the South departures design envelope typically route straight ahead before turning right to the south. The baseline is named D08-S-B Baseline. The baseline has been established from NTK data, current procedures, and operational expertise. The baseline was redrawn using summer 2023 data however largely covers the previous baseline and option C (D08-S-C) from the first engagement with stakeholders, this option has been removed as a result. Option A is the same for both stakeholder engagements.

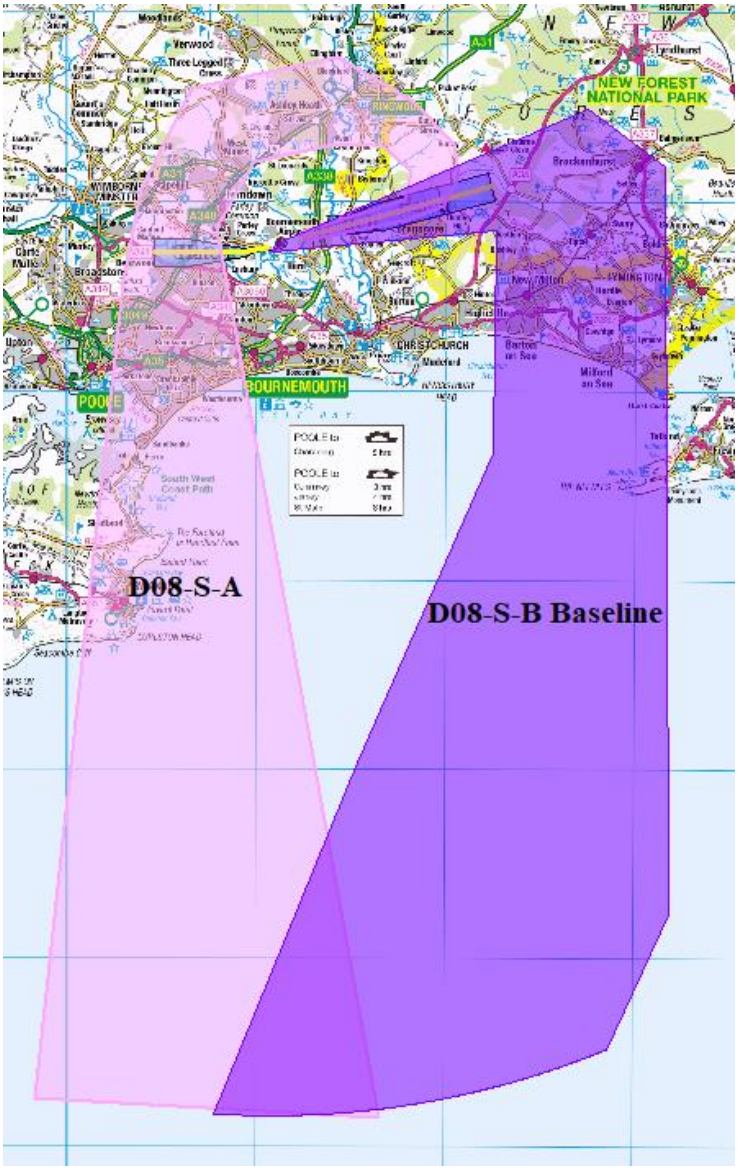


Figure 5: South Design Envelope 08 Departures over OS map.

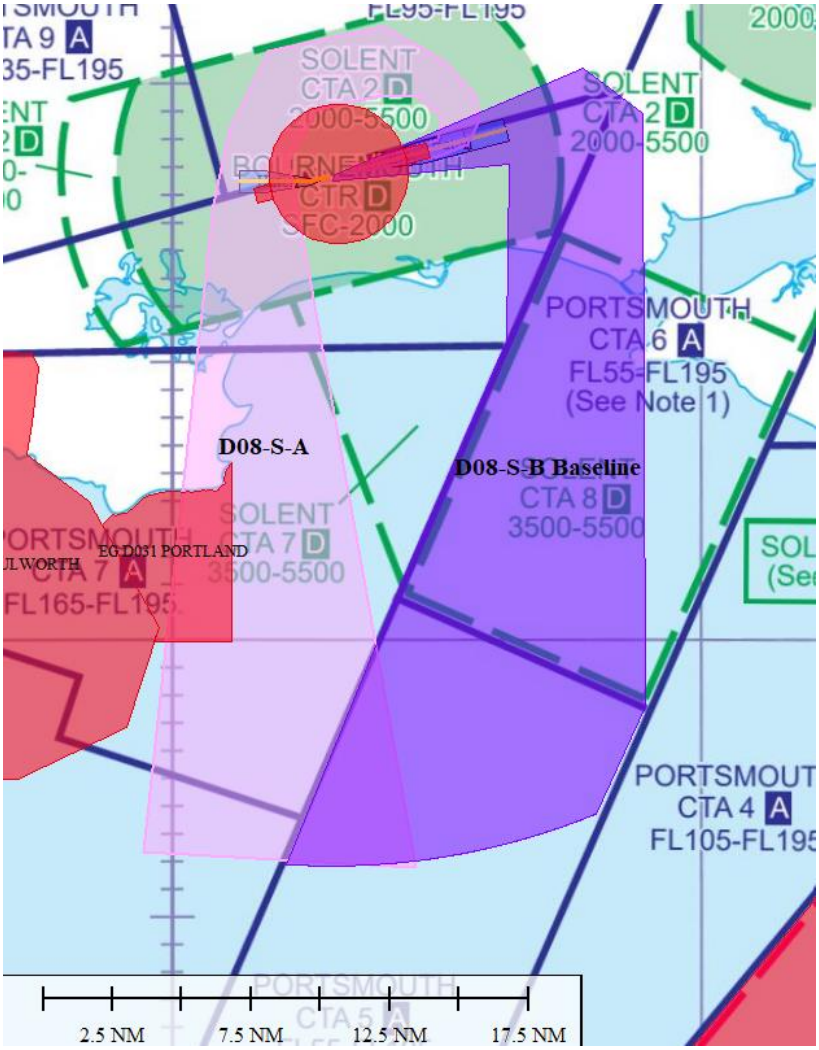


Figure 6: South Design Envelope 08 Departures over ENR chart.

1.7. Runway 08 Arrivals

1.7.1. All options for consideration in this Initial Options appraisal document are detailed in the table below for RWY 08 arrivals followed by images of the swathes for each design envelope over Google Earth imagery and en-route charts.

Northeast	Southeast	South
A08-NE-A	A08-SE-B	A08-S-A
A08-NE-B Baseline	**A08-SE-A Baseline**	A08-S-B
A08-NE-C		**A08-S-C Baseline**

Table 2: 08 Arrival options

1.7.2. Northeast Design Envelope

For the Northeast arrivals, aircraft typically arrive from the north and northeast to the north of the runway and turn left on approach. The baseline is named A08-NE-B Baseline. The baseline has been established from NTK data, current procedures, and operational expertise. The baseline is largely the same for both stakeholder engagements however, it is adjusted to accommodate flights to the north and is reflective of current operations. The options, A and C are the same in both engagements.

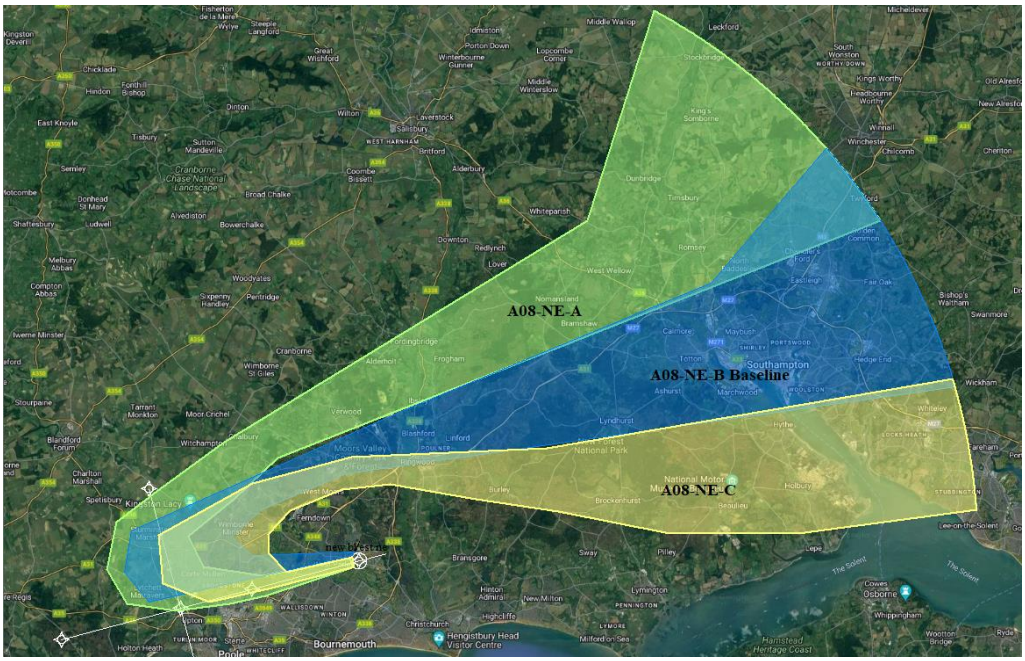


Figure 7: Northeast Design Envelope 08 Arrivals over Google Earth Imagery.

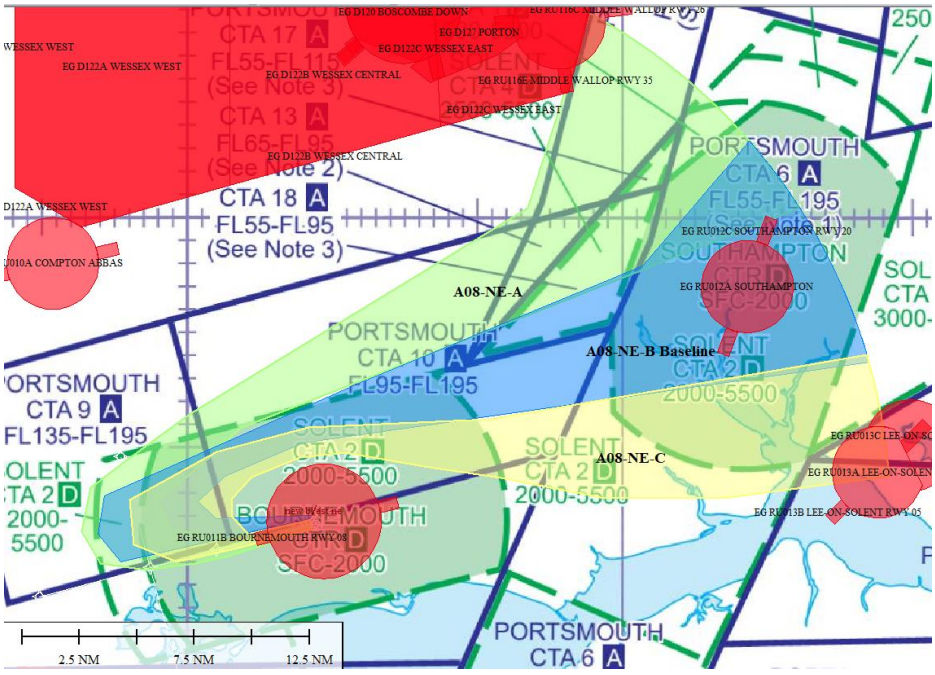


Figure 8: Northeast Design Envelope 08 Arrivals over ENR chart.

1.7.3. Southeast Design Envelope

The baseline for the Southeast arrivals design envelope arrive from the east and southeast. The baseline is named A08-SE-A. The baseline has been established from NTK data, current procedures, and operational expertise. Both the baseline and the option (B) in this design envelope remain unchanged between first and second engagements with stakeholders.

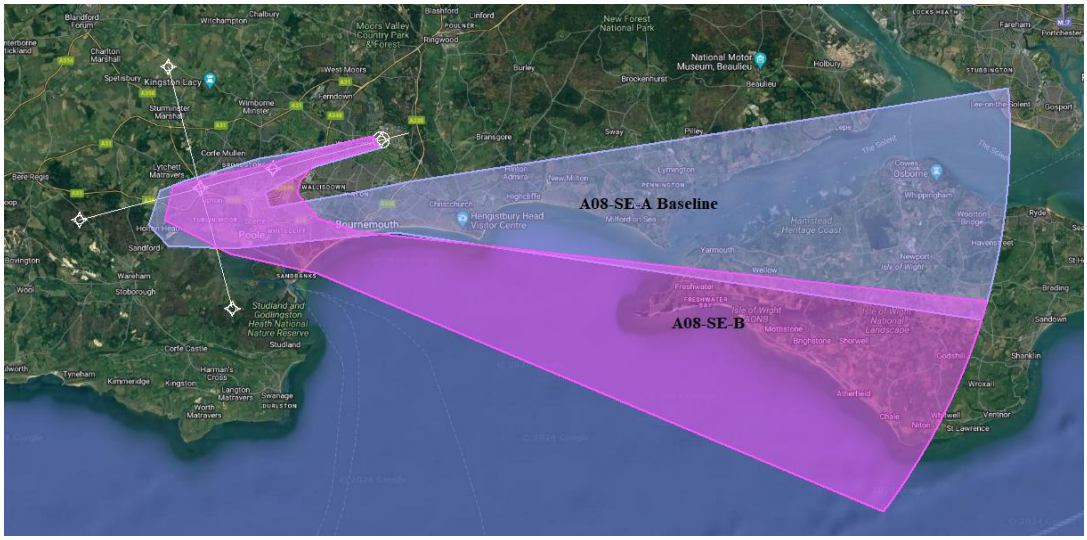


Figure 9: Southeast Design Envelope 08 Arrivals over Google Earth Imagery.

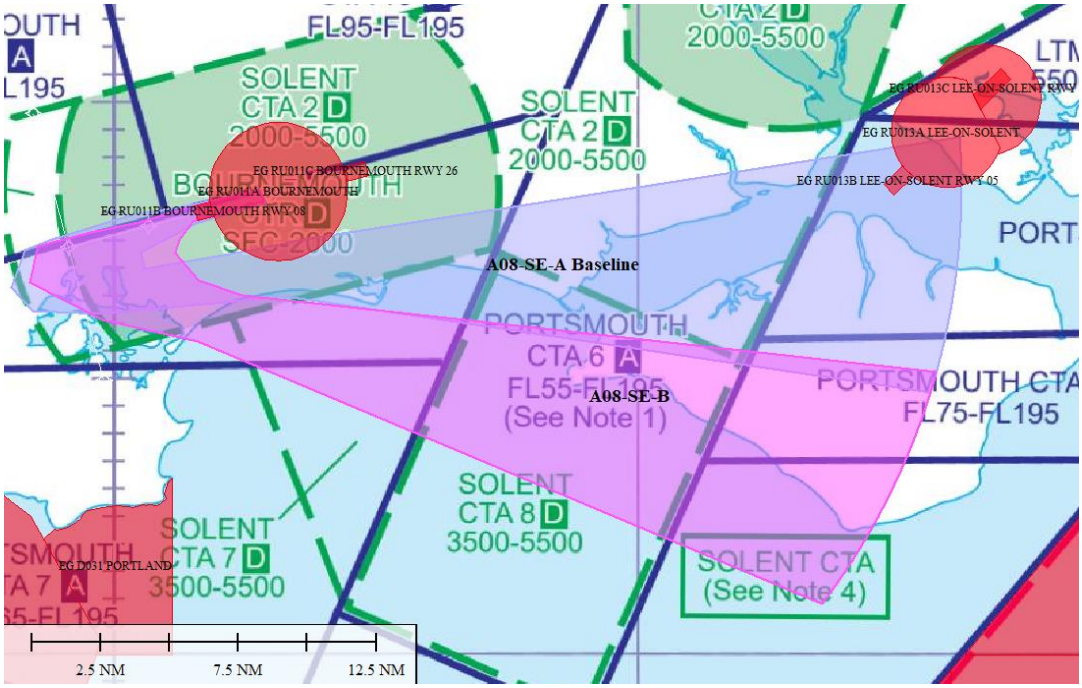


Figure 10: Southeast Design Envelope 08 Arrivals over ENR chart.

1.7.4. South Design Envelope

The baseline for the South arrivals design envelope arrive from the south and turn right onto the runway on approach. The baseline is named A08-S-B. The baseline has been established from NTK data, current procedures, and operational expertise. Aircraft will typically turn right on approach to RWY 08 at a distance greater than 10nm, see figure 12. Options A and C are the same for both stakeholder engagements.

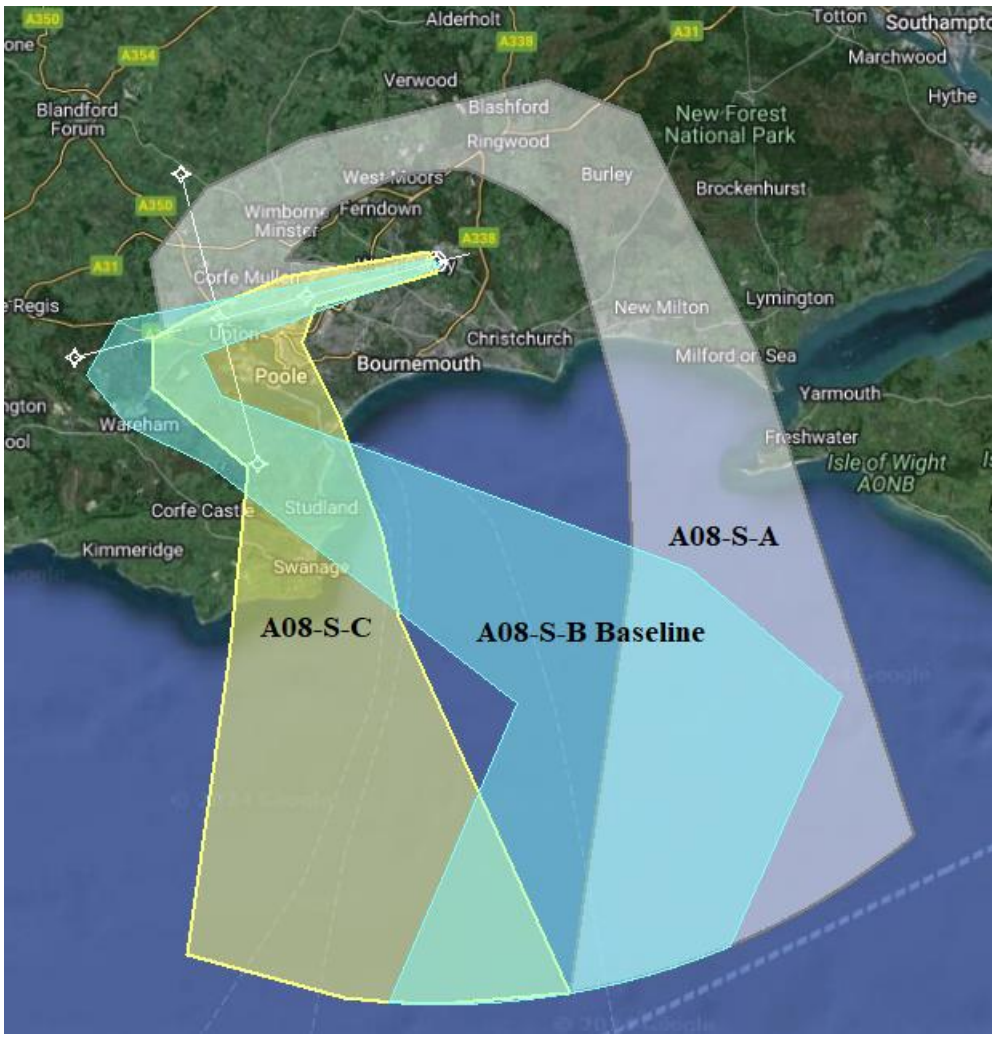


Figure 11: South Design Envelope 08 Arrivals over Google Earth imagery.

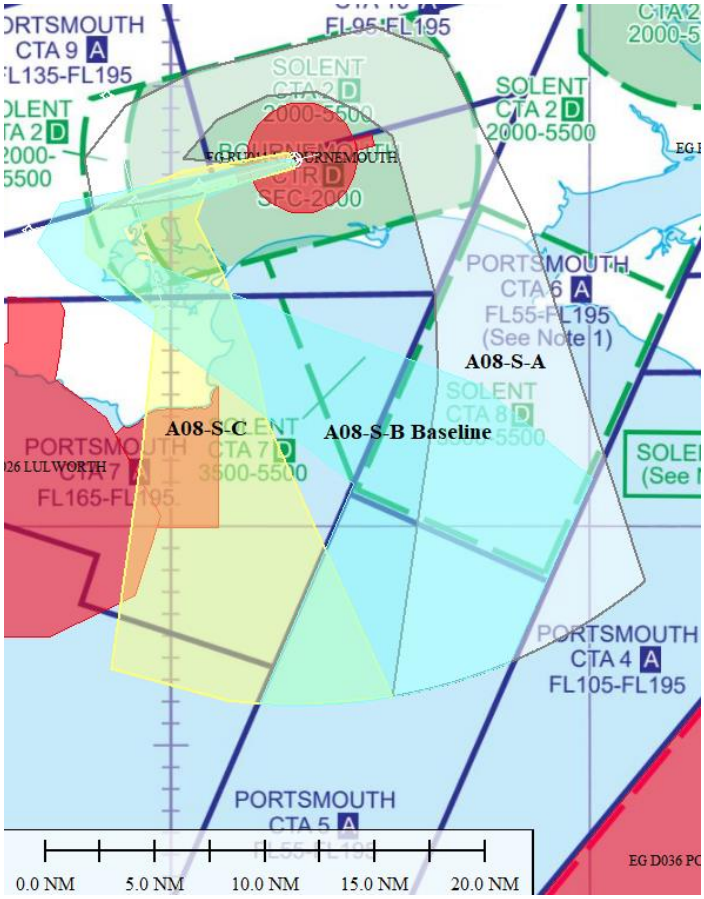


Figure 12: South Design Envelope 08 Arrivals over ENR chart.

1.8. Runway 26 Departures

1.8.1. All options for consideration in this Initial Options appraisal document are detailed in the table below for RWY 26 departures followed by images of the swathes for each design envelope over OS map and en-route charts.

East	South
D26-E-A	D26-S-A
D26-E-C Baseline	**D26-S-B Baseline**
D26-E-D	D26-S-C
D26-E-E	

Table 3: 26 Departure options

1.8.2. East Design Envelope

The baseline for the East departures design envelope typically route straight ahead before turning sharp right. The baseline is named D26-E-C. The baseline has been established from NTK data, current procedures, and operational expertise. The baseline has changed slightly between stakeholder engagements with the baseline moving slightly

to the south and as a result, the previous option C for this design envelope has been removed. Option A remains the same. Options A and B from the previous design envelope (Southeast) in the first engagement have been renamed D and E and are now part of the East design envelope; the swathe areas covered are the same for both engagements. I.e. D26-SE-A (first engagement) is the same as D26-E-D, and D26-SE-B (first engagement) is the same as D26-E-E. Options D and E would turn left off the runway before heading straight in an easterly direction.

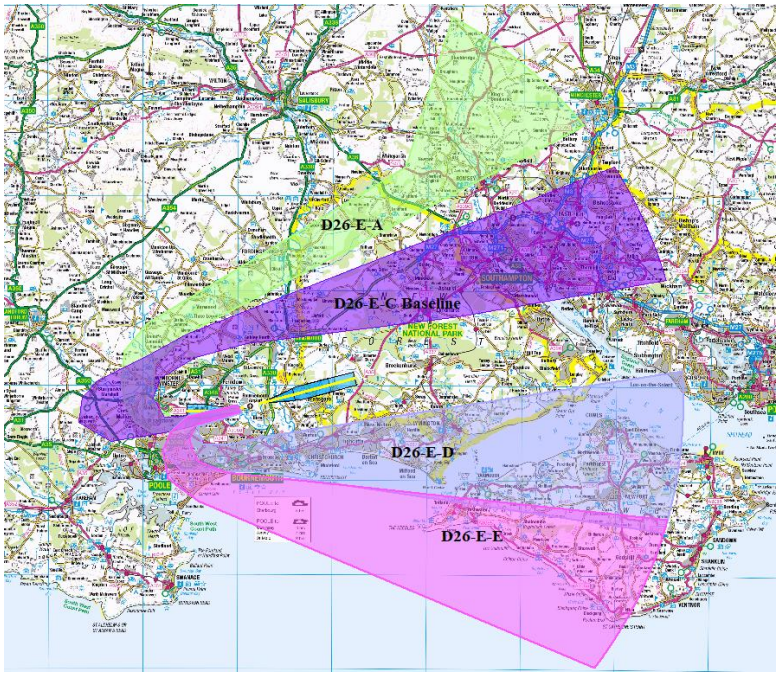


Figure 13 East Design Envelope 26 Departures over OS map.

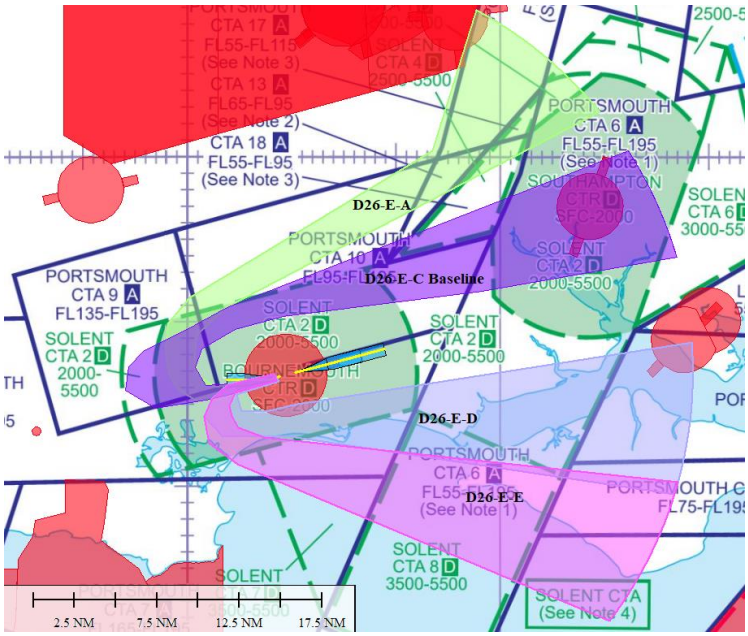


Figure 14: East Design Envelope 26 Departures over ENR chart.

1.8.3. South Design Envelope

The baseline for the South departures typically route straight ahead before turning left and to the south. The baseline is named D26-B-C Baseline. The baseline has been established from NTK data, current procedures, and operational expertise. Option C would follow a similar route however turn left and south sooner. Option A would turn right after departure and right again before finally turning south. Both A and C options were the same for both stakeholder engagements, the baseline has been redrawn to reflect current operations based on summer 2023 data.

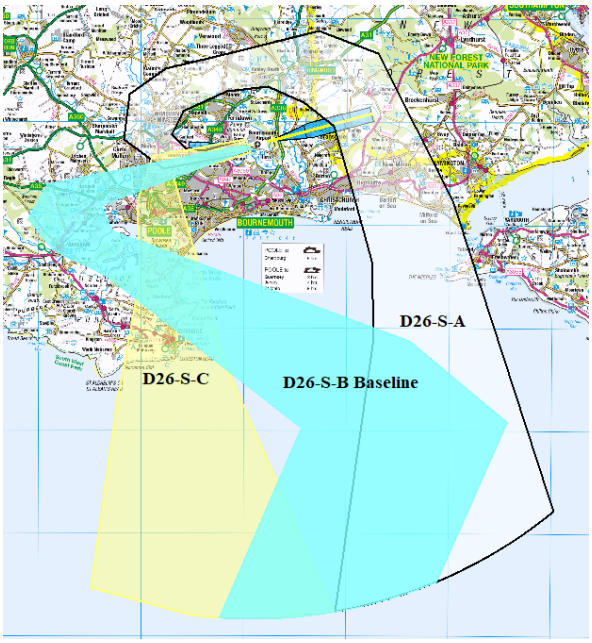


Figure 15: South Design Envelope 26 Departures over OS map.

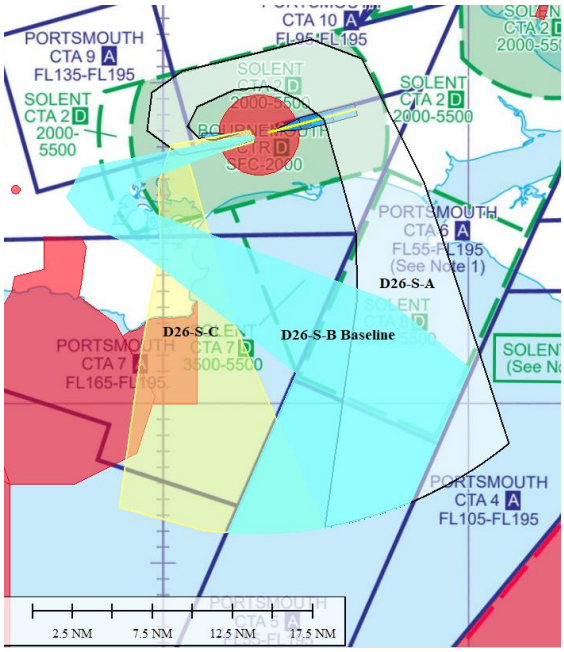


Figure 16: South Design Envelope 26 Departures over ENR chart.

1.9. Runway 26 Arrivals

1.9.1. All options for consideration in this Initial Options appraisal document are detailed in the table below for RWY 26 arrivals followed by images of the swathes for each design envelope over Google Earth imagery and en-route charts.

Northeast	East Southeast	South
A26-NE-A	**A26-ESE-A Baseline**	A26-S-A
A26-NE-B Baseline	A26-ESE-B	**A26-S-C Baseline**

Table 4: 26 Arrival options

1.9.2. Northeast Design Envelope

For the Northeast arrivals, aircraft typically arrive from the north and northeast to the north of the runway and turn slightly right on approach. The baseline is named A08-NE-B Baseline. The baseline has been established from NTK data, current procedures, and operational expertise. The baseline has been slightly redrawn to reflect current operations and option A is the same for both stakeholder engagements, however these two swathes were previously in the East Southeast design envelope and have been split into a separate design envelope for the Northeast.

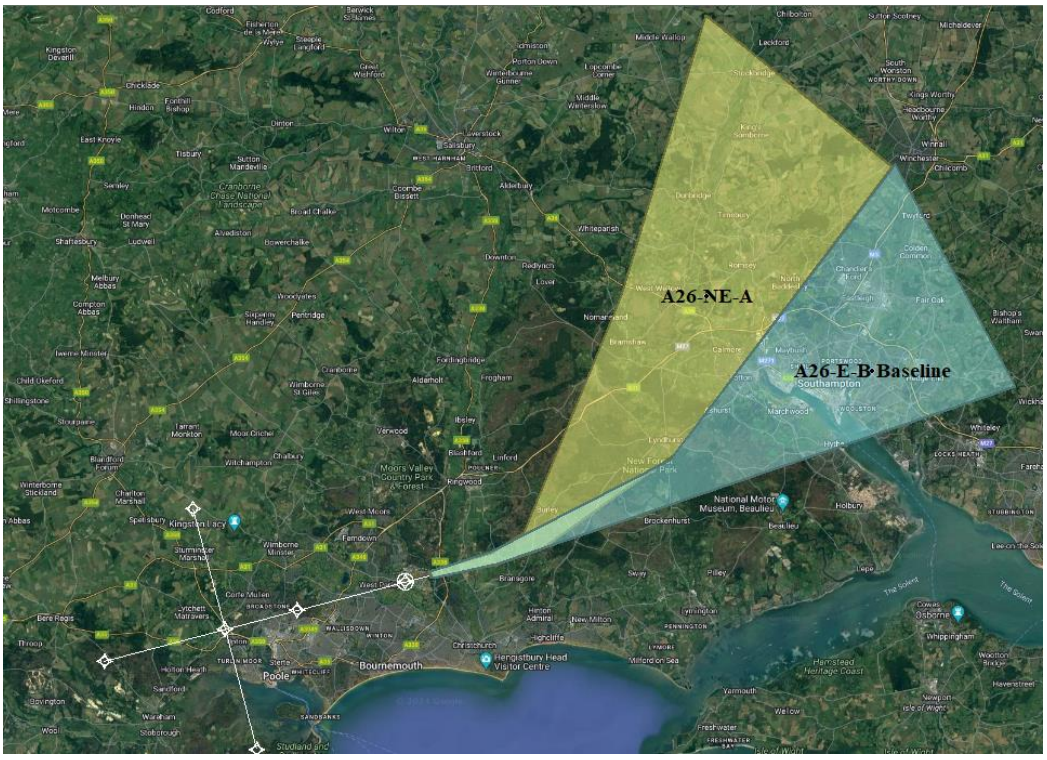


Figure 17: Northeast Design Envelope 26 Arrivals over Google Earth Imagery.

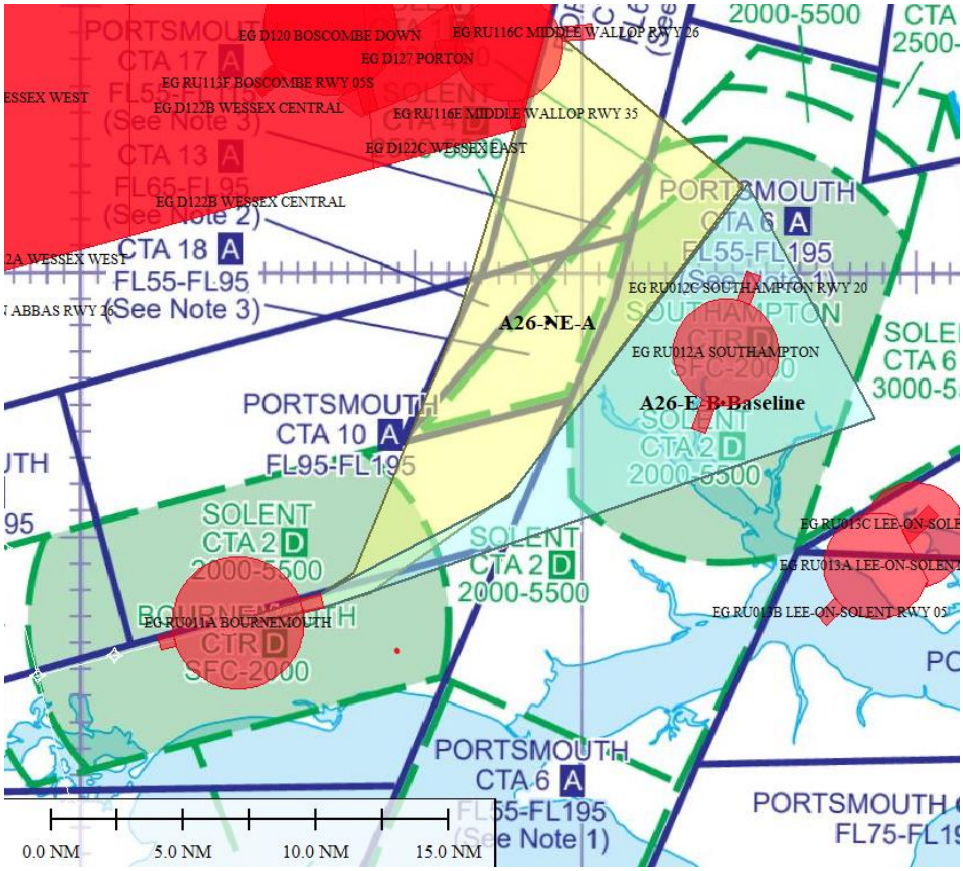


Figure 18: Northeast Design Envelope 26 Arrivals over ENR chart.

1.9.3. East Southeast Design Envelope

For the East Southeast arrivals, aircraft typically arrive from the east to the south of the runway. The baseline is named A08-ESE-A Baseline. The baseline has been established from NTK data, current procedures, and operational expertise. The baseline is similar to the previous option C in the first round of engagement. It has been redrawn slightly to reflect current operations. Option B has also been redrawn, however covers largely the same areas from the first engagement.

Figure 19: East Southeast Design Envelope 26 Arrivals over Google Earth Imagery.

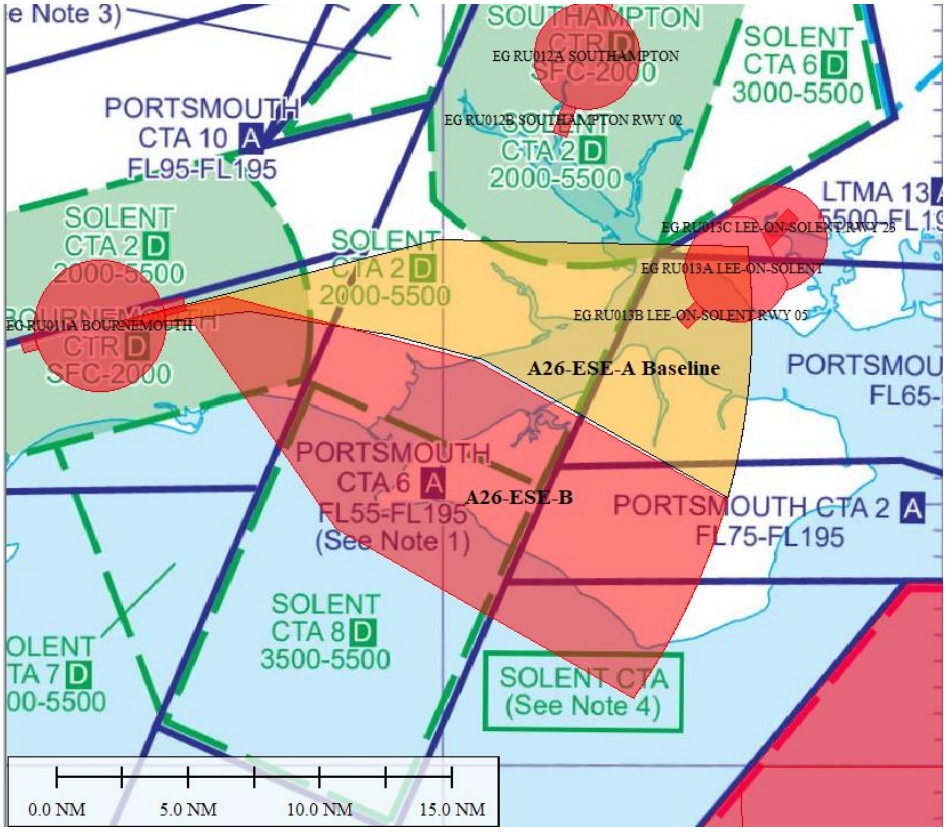


Figure 20: East Southeast Design Envelope 26 Arrivals over ENR chart.

1.9.4. South Design Envelope

For the South arrivals, aircraft typically arrive from the south of the runway and turn left upon approach. The baseline is named A08-S-C Baseline. The baseline has been established from NTK data, current procedures, and operational expertise. The baseline

has been redrawn and covers the previous options B and C; option B has therefore been removed. Option A remains the same and would approach the runway from the south turning right and right again before final approach from the north of the runway.

Figure 21: South Design Envelope 26 Arrivals over Google earth Imagery.

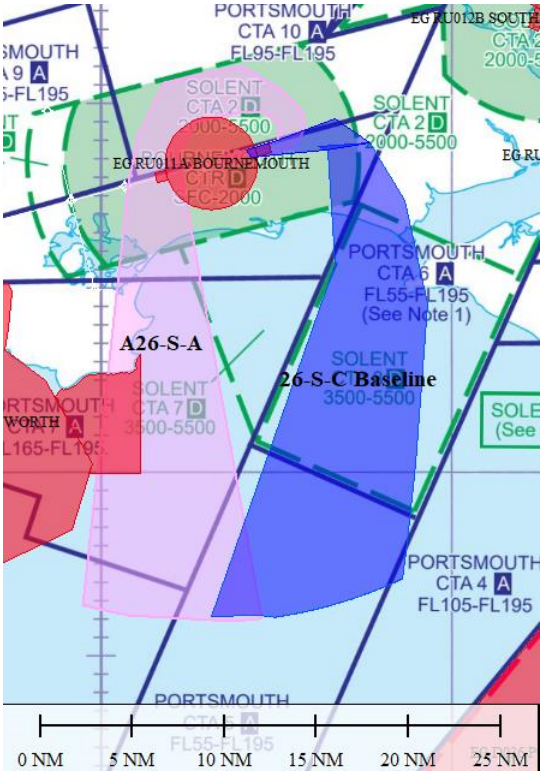


Figure 22: South Design Envelope 26 Arrivals over ENR chart.

2. Methodology

2.1. IOA assessment Criteria

2.1.1. This Initial Options Appraisal (IOA) is the first of three appraisals that will be conducted during the CAP1616 process. It is a high-level qualitative assessment of the options, defined in Stage 2A, against pre-defined decreed by CAP1616 Appendix E.

2.1.2. The purpose of this appraisal is to show the positives, negatives, benefits and costs of each option based on high level qualitative assessment conducted by subject matter experts.

2.1.3. Each option is assessed in isolation. Interdependencies between options will be explored at Stage 3 in collaboration with neighbouring airports and the en-route network.

2.1.4. These options are assessed based on the present day; we have not taken external changes into account at this stage. Future planned housing and industrial developments will be considered for each option taken forward to Stage 3 at the second options appraisal. These have been collated and are contained within Annex A.

2.1.5. This qualitative initial options appraisal does not consider traffic forecasts. Future traffic forecast are provided in the document titled 'Options Development and Design Principle Evaluation' in section 1.10 (available on the ACP Portal) and will be utilised during the Stage 3 options appraisal.

2.1.6. The other document have been submitted to support this Initial Options Appraisal, Bournemouth Airport Options Development and Design Principle Evaluation and can be found on the Airspace Change Portal.

2.1.7. The table below details the IOA methodology that has been followed to undertake an initial assessment of our options.

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	A qualitative assessment of changes to the noise impact for each option when compared to the baseline option. This has been done using the geographical area overflown by each option and the analysis from the DPE - DP2 Overflight and DP3 Noise Footprint. **Annex D** contains Population Density maps which assisted in the assessment for each option [7].
	Air Quality	A qualitative assessment of changes to the local air quality for each option when compared to the baseline option. This has been done using the geographical area overflown by each option in relation to local air quality specifically below 1000ft as per guidelines[8]. **Annex D** contains population density and air quality map and which assisted in the assessment for each option including analysis from the DPE – DP5 Emissions and Air Quality
Wider society	Greenhouse gas impact	A qualitative assessment of changes to the greenhouse gas impact for each option when compared to the baseline. This has been done by considering the difference in track miles to give an indication of the overall impact and using the analysis from the DPE – DP5 Emissions and Air Quality.
	Capacity/ resilience	A qualitative assessment of changes to airspace capacity and resilience for each option when compared to the baseline option. This includes our analysis from the DPE – DP7 Airspace Complexity and DP9 - Systemisation[9]
	Tranquillity	A qualitative assessment of changes to the tranquillity impact for each option when compared to the baseline option including analysis from the DPE – DP4 Tranquillity. This has been done paying particular attention to National Parks and AONBs in the vicinity of the option and where aircraft are likely to be below 7000ft. Areas of tranquillity have been scoped in within a 25nm range ring, where aircraft are likely to be at, or above, 7000ft. **Annex B** contains a tranquillity map which assisted in the assessment for each option.
	Biodiversity	A qualitative assessment of changes to the Biodiversity impact for each option when compared to the baseline option. It is not

[7] In the 'Noise impact on health and quality of life' section of the IOA tables, each dot represents the location of the Population Weighted Centroid (PWC) of an administrative unit. For more information see Annex D.

[8] AQMAs were scoped in within a 10nm range ring; this represents approximately 4000ft on a 6% climb gradient. Further analysis in Stage 3 will identify any AQMAs under 1000ft when options are refined to tracks.

[9] Possible interactions and conflicts between arrival and departure swathes have not been considered at this stage as it is these will be assessed in Stage 3 when the swathes are refined.

Group	Impact	Qualitative Assessment
		always possible to qualitatively assess if an option is 'better' or 'worse' than the baseline, however where possible an option may be assessed as overflying more or less European sites. Data retrieved from The Department for Environment, Food and Rural Affairs (DEFRA) Magic maps is used to identify areas of Biodiversity significance, such as Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA) and Ramsar sites. Additionally potential sites were investigated. **Annex C** contains biodiversity maps which assisted in the assessment for each option. Please refer to **Annex C** for maps of European sites and colour keys.
General aviation	Access	A qualitative assessment of changes to the General Aviation (GA) access to airspace for each option when compared to the baseline option. This includes our analysis from the DPE – DP6 Airspace Dimensions.
General aviation/ commercial airlines	Economic impact from increased effective capacity	A qualitative assessment of the economic impact for GA and commercial airlines from changes to capacity for each option when compared to the baseline option.
	Fuel burn	A qualitative assessment of changes to the impact to fuel burn for GA and commercial airlines for each option when compared to the baseline option. This has been done by considering the difference in track miles to give an indication of the overall impact and uses analysis from the DPE – DP5 Emissions and Air Quality and DP11 Operational Cost [10].
Commercial airlines	Training costs	A qualitative assessment of changes to commercial airline training costs for each option when compared to the baseline option.
	Other costs	A qualitative assessment of changes to additional commercial airline costs for each option when compared to the baseline option.
Airport/ Air navigation	Infrastructure costs	A qualitative assessment of changes to infrastructure costs for the Airport and/or Air Navigation Service Provider (ANSP) for each option when compared to the baseline option.

[10] Definition of DP11 Operational Cost - Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.

Group	Impact	Qualitative Assessment
service provider	Operational costs	A qualitative assessment of changes to operational costs for the Airport and/or ANSP for each option when compared to the baseline option.
	Deployment costs	A qualitative assessment of deployment costs for the Airport and/or ANSP for each option when compared to the baseline option, although it is acknowledged that there will be costs associated with the development of any routes for this ACP.
All	Safety	A qualitative safety assessment for each option when compared to the baseline option including analysis from the DPE - DP1 Safety.
	AMS Realisation	A qualitative assessment of whether the option meets the AMS objectives of safety, integration, simplification and environmental sustainability compared with the do-nothing baseline. Includes analysis from the DPE – DP12 AMS Realisation. Where an option meets the AMS objective but does not provide any improvement from today then this has been noted in the Assessment.
	Interdependencies, conflicts and trade-offs	A qualitative assessment of each option compared to the baseline and includes analysis from the DPE - DP10 Independence. Further qualitative assessments have been carried out by SMEs at the airport.

Table 5: IOA Methodology

2.2. Safety Assessment

2.2.1. In line with the safety assessment requirements for the initial options appraisal set out by CAP1616, an initial safety assessment was carried out by Bournemouth Airport. This consisted of a high-level qualitative assessment of each option, including the baselines for each runway departures and arrivals. This was followed by a safety assurance meeting with NATS, NERL, a representative of Southampton Airport and the safety manager of Bournemouth Airport. The airlines were invited to attend however, no pilot or representative were available for this meeting.

2.2.2. The objective of this meeting was to examine each option with regards to safety and connectivity to the network. Each option was discussed, and comments recorded for the minutes. The comments are recorded in the stakeholder summary sections for each design

envelope in the 2a Options Development and Design Principle Evaluation document[11], section 6. Feedback is further reflected in the safety sections of this document.

2.3. Shortlisting Criteria

2.3.1. Assessment

2.3.1.1. The Tables contained in this section provide a summary assessment of the net costs/benefits for each option in each of the categories which have been assessed against the individual baseline for each suite of options. All our analysis has been qualitative and there are some categories that require further analysis at later stages of this ACP. The Options have been assessed as to whether there is potential for an overall net benefit, no benefit or cost and overall net cost, they are colour coded as per the table below:

Qualitatively assessed as having potential for an overall net benefit.	
Qualitatively assessed as having neither impact nor benefit.	
Qualitatively assessed as having potential for an overall net cost.	

Table 6: IOA Summary Key

2.3.2. Discounting

2.3.2.1. The Qualitative assessment of each option was carried out by looking at the number of Red, Amber or Green (RAG) scores for each option and assessing the feasibility of each. Having completed the Qualitative assessment of each option, the Team at Cyrrus and BOH undertook the process of discounting. However, it was decided that due to a number of factors, no options would be discounted at this stage of the process. These reasons are summarised below:

- Assessment of Noise and Air Quality: due to our high-level approach with swathes, we have been unable to accurately quantify which areas could see an increase or decrease in noise or air quality. Our assessment of overflight is qualitative at this stage and does not align with CAP1498's definition and assessment. This means that when the swathes are refined to actual routes (lines on the map), communities that are contained within the swathe and feature in the assessment, may be avoided. Therefore, it has been decided that the analysis at this IOA stage is not sufficient to rule out or rule in options based on these assessments. It has been determined that further analysis should be done on each option (which will done in the Full Options Appraisal, at Stage 3 of this ACP). This will also ensure the best options are in keeping with the Government's Altitude Based Priorities, that stipulate:

[11] The minutes of this meeting can be found in Annex A of the Options Development and Design Principle Evaluation document.

- In the airspace from the ground to below 4,000 feet, the Government's environmental priority is to limit and, where possible, reduce the total adverse effects on people;
- Where Options for route design from the ground to below 4,000 feet are similar in terms of the number of people affected by total adverse noise effects, preference should be given to that option which is most consistent with existing published airspace arrangements.

- Tranquillity and Biodiversity: In a similar vein to the issues discussed above with regards to swathes, the assessments of Tranquillity and Biodiversity are made by assessing the sites that are contained within each swathe. Once the options are refined to routes (lines on maps) there would be the opportunity to avoid various locations. This means that the impact on these sites may be minimised. Furthermore, a detailed analysis will be conducted in the Full Options Appraisal in Stage 3 of this ACP, which will allow more accurate quantification of the benefits and costs of each option.

- Safety Assessment: The options that were assessed as having a net cost in safety were assessed as such for flying over a danger area (DA). These options are still under consideration as issues may be resolved in the next stage of the ACP process, and with regards to DAs as they have the potential of creating respite routes that could be used when the DAs are inactive. There is no intention to use the routes when the DAs are active, so it was decided that discounting options based on the safety assessments at this stage was not beneficial and does not align with our aim to potentially create respite routes. Detailed analysis will be conducted in the Full Options Appraisal in Stage 3 of this ACP.

- Integration with neighbouring airports and the network: As there has not yet been any specific technical engagement between neighbouring airports to deconflict routes, or with the en-route network, options have not been discounted on the basis of Interdependencies, conflicts and trade-offs . Further work will need to be done and will be progressed as part of the Stage 3 activities. It has been decided to retain all options in order to facilitate flexibility and integration with neighbouring airports. This would potentially enable free flow for departures and better connectivity with the network. Detailed analysis will be conducted in the Full Options Appraisal in Stage 3 of this ACP.

3. Baseline Review

3.1. Overview

3.1.1. CAP1616 requires airspace change sponsors to identify a baseline to facilitate environmental evaluation of the Design Options. It explains that this will be a 'Do Nothing' scenario[12] and will largely reflect the current-day scenario, although taking due consideration of known or anticipated factors that might affect that baseline, for example any significant planned housing developments close to an airport, forecast growth in air traffic, or expected changes in airlines' fleet mix. Therefore, all environmental assessments must illustrate the difference between a pre-implementation ('Do Nothing') scenario and a post-implementation scenario, ensuring that the periods are comparable.

3.1.2. A full description of the baseline is described in the Options Development and Design Principle Evaluation document., Step 2a, available on the ACP portal.

3.1.3. As described in section 2.11 of the Options Development and Design Principle Evaluation document, a second round of engagement took place in November 2023. This was following a reassessment of the baselines for arrivals and departures for both 08 and 26 runways. This assessment was carried out as some minor changes to the operations at BOH had taken place and it was considered advisable to ensure that recent data were being analysed as the design options are assessed against these baselines. Moreover, the baselines were reassessed to comply with the CAA requirements of track data from the period of 16th June-15th September inclusive.

3.2. Baseline Changes

3.2.1. This section provides a summary of the changes identified in the baselines between the first assessment of July to August 2022 and the second assessment of 16th June-15th September 2023 inclusive. In the Bournemouth Airport Stage 2 Engagement feedback form [13], stakeholders were asked if they agreed with the changes in these baselines.

3.2.2. The following provides an illustration of how the baselines have changed for each runway's departures and arrivals. The illustrations for the new baselines show the baseline swathes over the tracks. These are illustrated over OS maps for clarity of tracks and swathes, rather than of the map. These images were presented to stakeholders over OS maps, google earth imagery and the En-route chart in the presentation accompanying the feedback survey.

3.2.3. When considering the baseline changes for 08 Departures it was noted that little to no commercial traffic departed to the northwest and so this baseline was removed. Options developed for this direction were therefore assessed against no current operation, where the DP requires assessment compared to current day operations. It was further noted that there were two distinct directions to the northeast and to the east, therefore two baselines

[12] CAP1616 definition of baseline: 'Scenario in analysis of different options where the impacts of the change not being implemented are analysed (also known as 'do nothing' or 'do minimum' option)' Appendix J, page 268.
[13] See document titled 'Bournemouth Airport CAP1616 Stage 2 (Re) Engagement Feedback Form Second Round' on ACP Portal

were identified where there was previously only one to the east. The south baseline remains similar to the original.

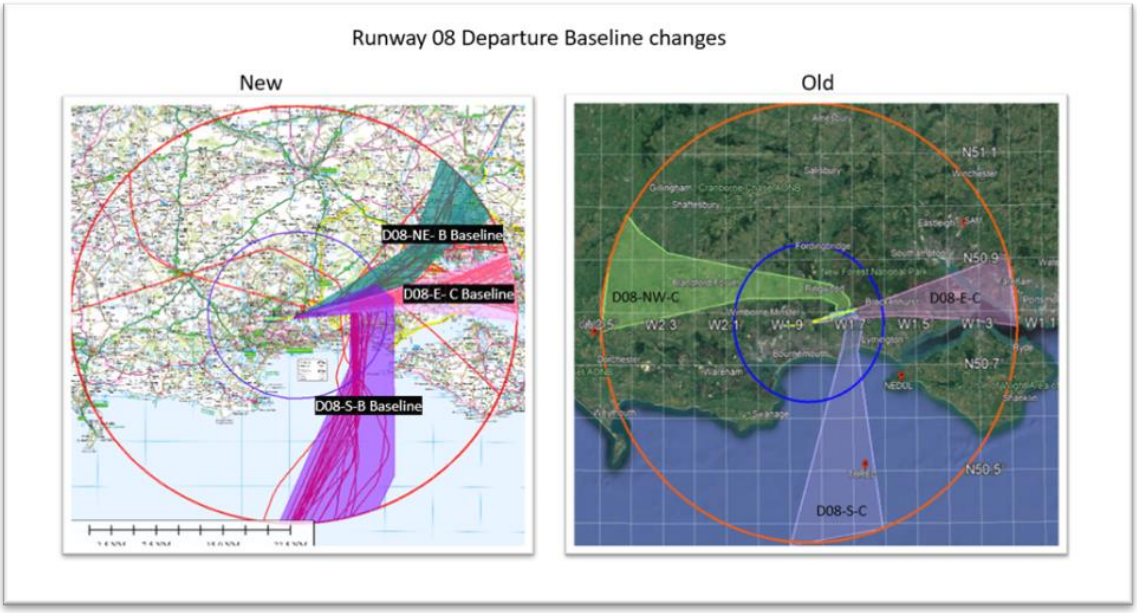


Figure 23: Baseline changes 08 Departures

3.2.4. The baseline changes for 08 Arrivals are minimal; the baseline to the northwest was removed as it was noted that little to no commercial aircraft arrive from the northwest. The other baselines remain largely the same. The Southeast baseline was renamed East.

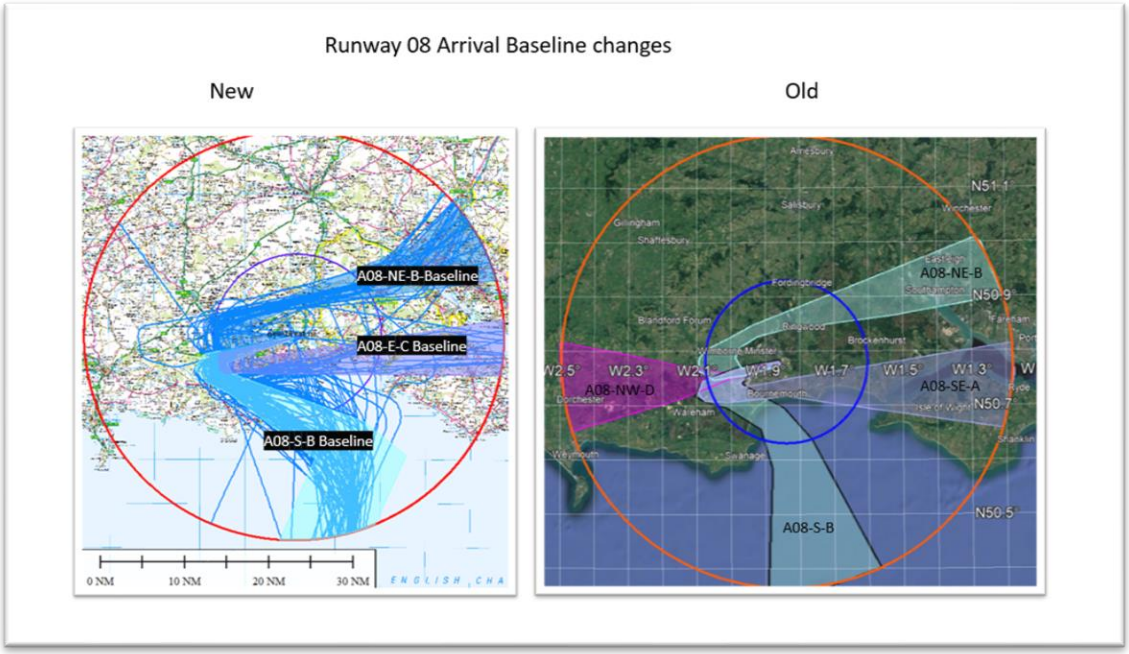


Figure 24: Baseline changes 08 Arrivals

3.2.5. Baseline changes for RWY 26 departures include a removal of the baseline for departures to the northwest as little to no commercial traffic was identified as departing in this direction. There were two baselines, Northeast and Southeast, the latter turning left off the runway. Little to no commercial traffic was turning left and heading in a southeast direction from this runway and this baseline was therefore removed. The Northeast baseline was retained and renamed East to reflect current operations and airport procedures.

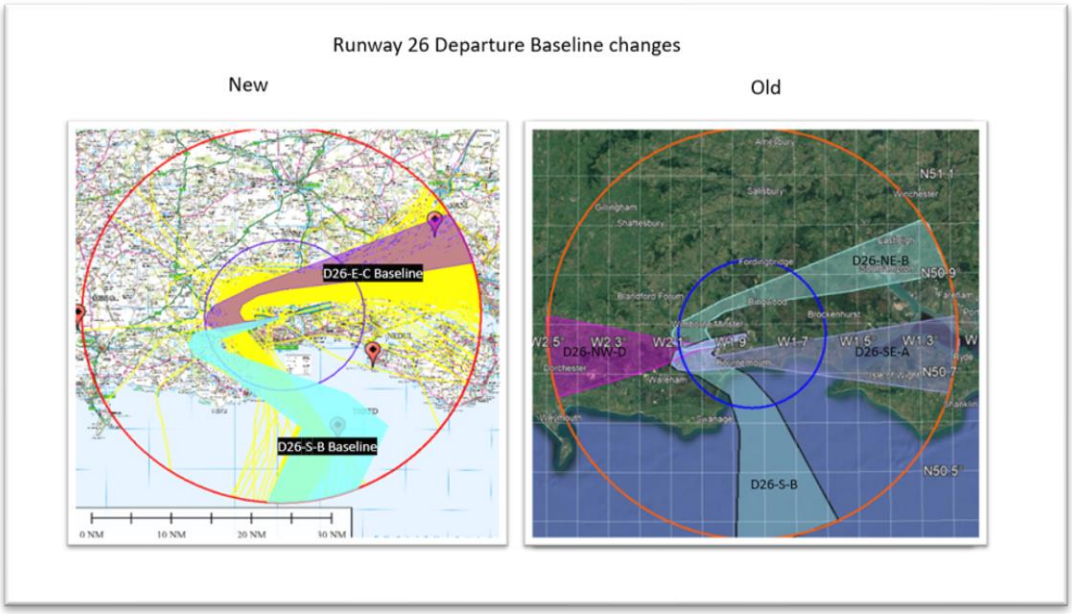


Figure 25: Baseline changes 26 Departures

3.2.6. The arrivals to RWY 26 baseline changes include the removal of the northwest baseline as little to no traffic was arriving from this direction. The East baseline was split into Northeast and East Southeast to reflect current operations and procedures. The South baseline remains largely the same and in redrawn slightly to reflect the current situation.

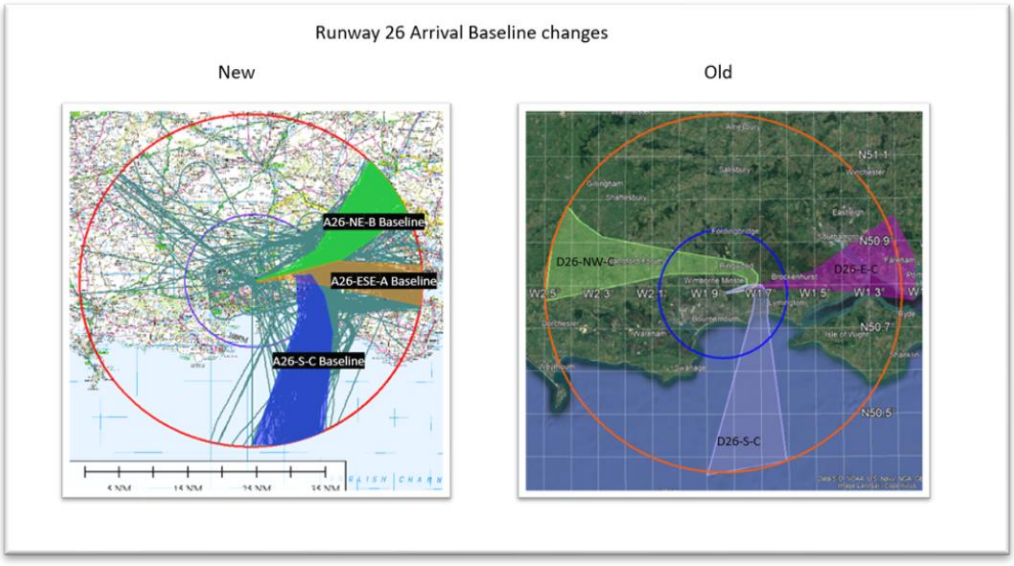


Figure 26: Baseline changes 26 Arrivals

4. Safety Assessment

4.1. CAP1616 requirements

4.1.1. CAP1616 requires Change Sponsors to conduct a qualitative Safety Assessment at Step 2b of the process. An initial indication of safety implications is required at this stage with a qualitative assessment of the potential impacts of each option on safety. Importantly, it is not expected to compare the safety of one option against another at this stage [14].

4.1.2. A seven-step CAP760 compliant Safety Assessment will be conducted prior to Step 4b. This activity will include Hazard Identifications, Risk Assessment, and the production of the required Safety Case(s) for the proposed change(s).

4.2. Safety Assurance Step 2b

4.2.1. A safety assurance meeting for this stage was held with the objective of a high-level assessment of each of the conceptual options. In this meeting there were representatives from NATS, NERL and Southampton Airport in addition to representatives from BOH with safety responsibilities. The outcome of the assessment has been reflected in the appraisal tables for each design option in the Initial Options Appraisal section of this document, Section 6. Minutes of the Safety Assurance meeting can be found in Annex A of 2a Options Development and Design Principle Evaluation document, available on the ACP portal.

4.2.2. The Safety Assurance Team involved in this ACP in the next stage (Stage 3) will consist of the following suitably qualified and empowered individuals:

- Representative of Bournemouth Airport conversant with the Safety Management System (SMS);
- Airspace Change Consultant ;
- Airport Safety Manager;
- Representatives from neighbouring LTMA ACP Sponsors (including NERL) ;
- At least one pilot from an airline routinely operating at BOH.

[14] For more information about the CAP1616 safety assessment for Stage 2 see page 206, paragraphs E49-E52.

5. Noise

5.1. Overview

5.1.1. Section 2.3 of the Options Development and Design Principle Evaluation document details the noise requirements and methodology used for the assessment of the baseline. Section 3.7 of the same document provides details of the current situation with regards to noise. This methodology will be used to assess options at a later stage in the ACP process.

5.1.2. Details of the methodology used to assess noise in this IOA is detailed in Table 5.

5.2. Noise modelling Category

Noise Contour, dB LAeq	Population within Noise Contour			
	Summer Day $LA_{eq,16h}$		Summer Night $LAeq,8h$	
	2023	2032	2023	2032
45	-	-	2054	3092
48	-	-	169	313
51	5913	7991	27	33
54	2249	3297	0	2
57	169	678	0	0
60	27	27	0	0
63	0	0	0	0
66	0	0	-	-
69	0	0	-	-

Table 7: Population predicted to be exposed to airborne aircraft noise

5.2.1. The population contained within the 51 dB $LAeq,16h$ and 45 dB $LAeq,8h$ noise contours has been estimated for 2023 and forecasted for 2032 and this has been used to determine the noise modelling category of BOH as defined by CAP2091; BOH currently falls into Category D, and this is not expected to change by 2032.

6. Options Appraisal

6.1. This section provides the IOA for each option carried forward from step 2a. It is structured by runway, 08 departures and arrivals, followed by 26 departures and arrivals. Within each section the options are assessed according to the design envelope. Options are qualitatively assessed as described in Table 5 in Section 2.1.

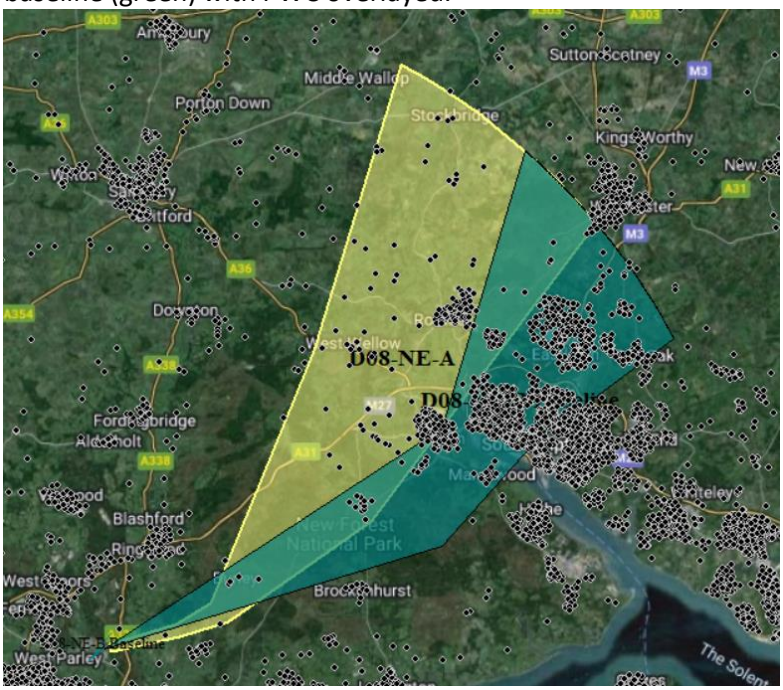
6.2. Runway 08 Departures

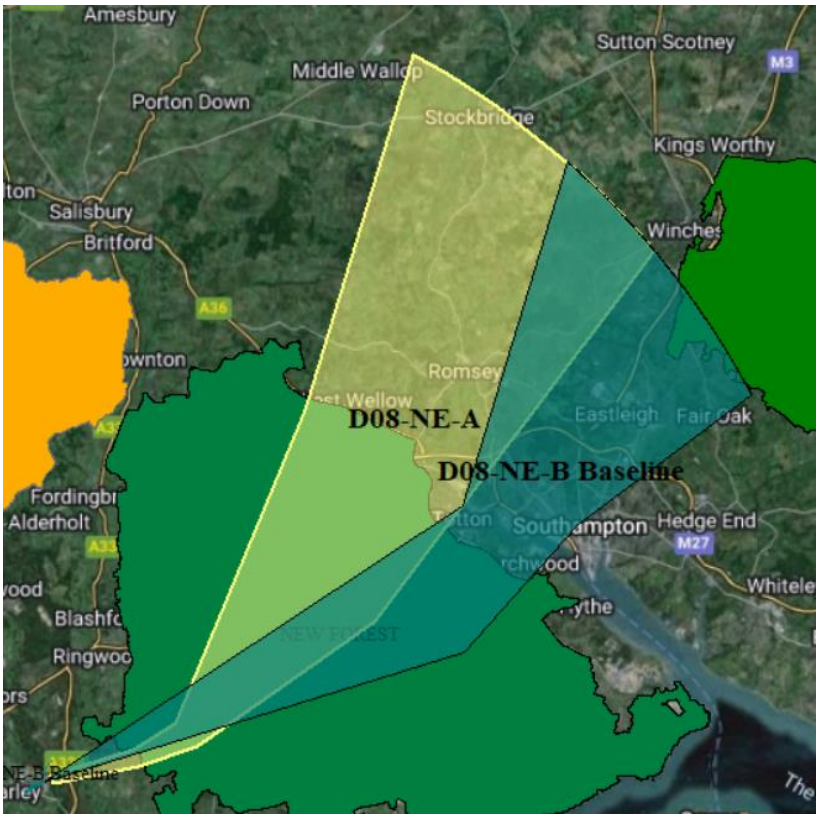
6.2.1. For RWY 08 there are three design envelopes for departures, Northeast, East and South.

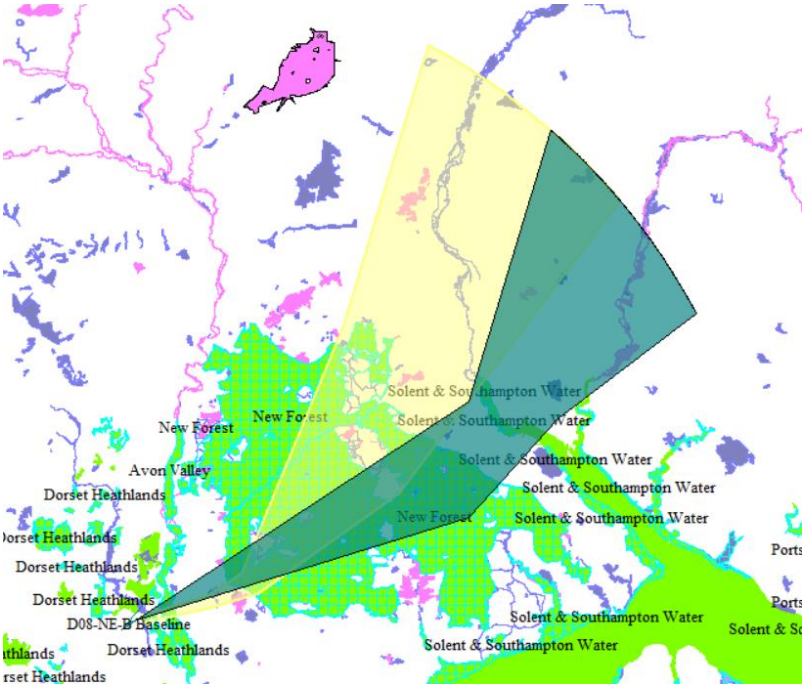
6.2.2. Northeast Design Envelope

6.2.2.1. In the Northeast Design Envelope for departures there are two options: D08-NE-A and D08-NE-B Baseline.

6.2.2.2. Option D08-NE-A

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option would initially overfly the same communities as the baseline after take-off, until the route turns left. After this point, this design option would overfly different communities to the baseline. The newly overflown areas would be of lower population density than the baseline. Newly overflown communities include Minstead, Lyndhurst and Stoney Cross, although aircraft are expected to be above 4000ft at this point. Image shows option A (Yellow), option B baseline (green) with PWC overlayed. 

Group	Impact	Qualitative Assessment
	Air Quality	This design option would initially overfly the same communities as the baseline after take-off with no change in impact to local air quality under 1000ft.
Wider society	Greenhouse gas impact	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to greenhouse gas and CO_2 emissions are anticipated.
	Capacity/ resilience	This option takes aircraft out of CAS airspace. FUA in this area would require reviewing and amending. Currently available 06:30-09:30 and 17:30-21:30 (Winter) and 04:45-08:30 and 16:30-20:30 (Summer).
	Tranquillity	Similar amount of the New Forest National Park will be overflown, compared with the current operations, the northeast of the park would be newly overflown. There would therefore be a change in impact to the northeast of New Forest National Park in terms of tranquillity. Image shows option A (Yellow), option B baseline (green) with the New Forest NP in green underneath the swathes. 

Group	Impact	Qualitative Assessment
	Biodiversity	This option overflies similar sites after take-off, then similar amount but different sections of sensitive sites. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (dark green) and option (yellow) laid over these sites. 
General aviation	Access	This option takes aircraft out of CAS airspace.
General aviation/ commercial airlines	Economic impact from increased effective capacity	This option is broadly similar to the current operations so limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to fuel burn are anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.

Group	Impact	Qualitative Assessment
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with this option for either the Airport or ANSP. Unless FUA amendments then there maybe additional costs.
	Operational costs	No operational costs are anticipated with this option for either the Airport or the ANSP. Unless FUA amendments then there maybe additional costs.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	This option takes aircraft out of CAS airspace. No safety concerns. Note: BOH already have FUA in that area it will need to be reviewed/amended for this option. Currently available 06:30-09:30 and 17:30-21:30 (Winter) and 04:45-08:30 and 16:30-20:30 9 summer).
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of simplification, improving fuel efficiency, or reducing noise. It does however meet the safety objectives and is therefore partially aligned.
	Interdependencies, conflicts and trade-offs	Option D08-NE-A shares significant interdependencies with Southampton. Solent CTA, CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace above the Bournemouth CTR delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions. At higher level this option may have interdependencies with Gatwick, Farnborough and Heathrow traffic.

Table 8: Option D08-NE-A

6.2.2.3. Option D08-NE-B Baseline

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities after take-off with no change to noise impact.

Group	Impact	Qualitative Assessment
	Air Quality	This option would continue to overfly the same communities after take-off with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the New Forest National Park will be overflown. There would be no change in impact on New Forest National Park or tranquillity.
	Biodiversity	There are no additional biodiversity implications associated with retaining the baseline.
General aviation	Access	No change in CAS or access to it if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if this baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No commercial airline costs are anticipated should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with this option for either the Airport or the ANSP.
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.
All	Safety	No safety concerns should this baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.

Group	Impact	Qualitative Assessment
	Interdependencies, conflicts and trade-offs	Option D08-NE-B baseline shares significant interdependencies with Southampton. Solent CTA, CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace above Bournemouth CTR delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions. At higher level this option may have interdependencies with Gatwick, Farnborough and Heathrow traffic

Table 9: Option D08-NE-B Baseline

6.2.3. East Design Envelope

6.2.3.1. In the East Design Envelope for departures there are two options, D08-E-C Baseline and D08-E-D.

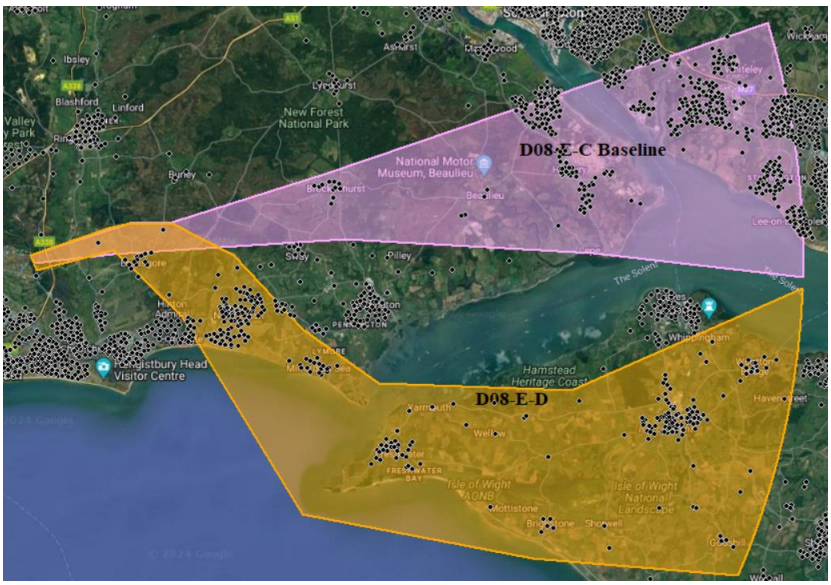
6.2.3.2. Option D08-E-C Baseline

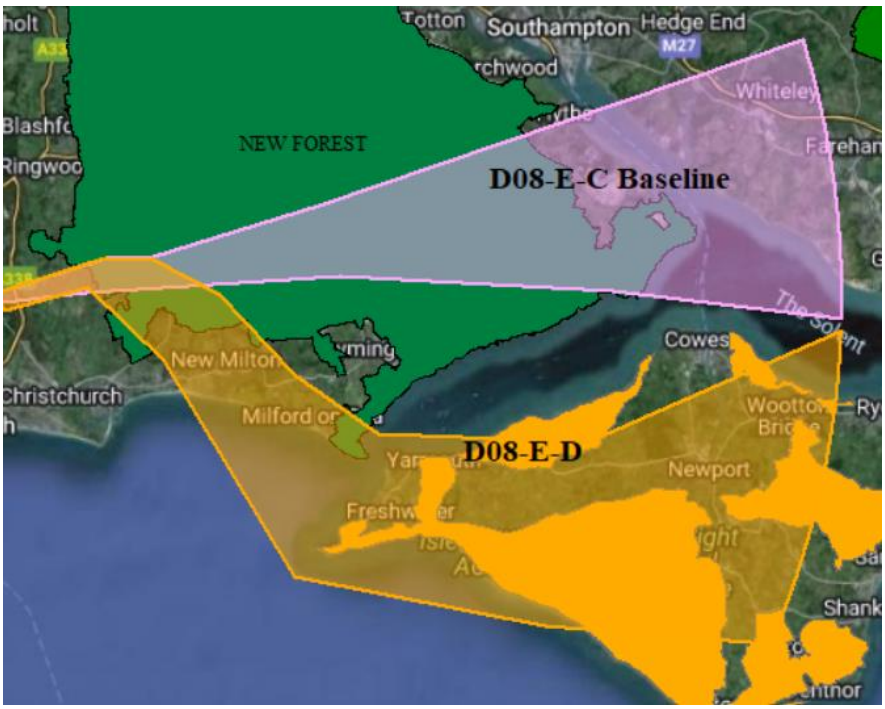
Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities after take-off with no change to noise impact.
	Air Quality	This option would continue to overfly the same communities after take-off with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the New Forest National Park will be overflown. There would be no change in impact on New Forest National Park or tranquillity.
	Biodiversity	There are no additional biodiversity implications associated with retaining the baseline.
General aviation	Access	No change in CAS or access to it if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.

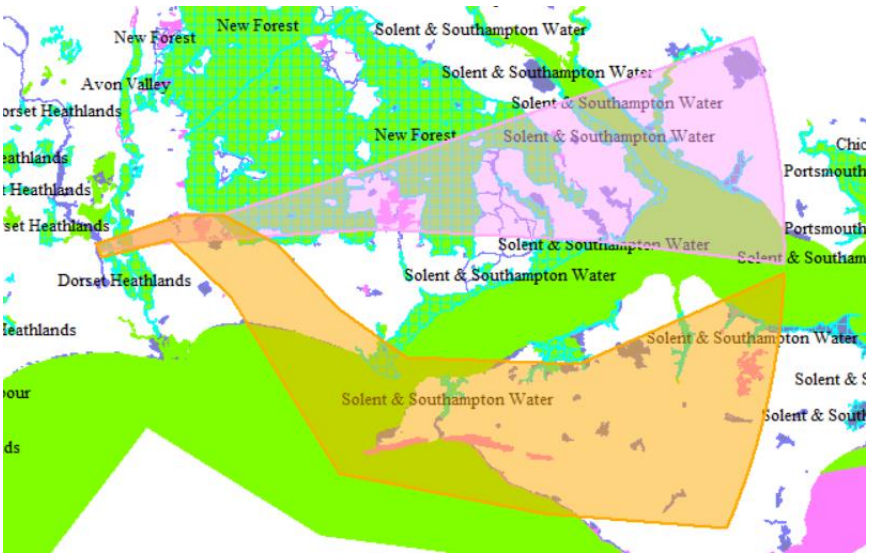
Group	Impact	Qualitative Assessment
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if this baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No commercial airline costs are anticipated should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP.
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.
All	Safety	No safety concerns should this baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.
	Interdependencies, conflicts and trade-offs	Option D08-E-C-Baseline shares significant interdependencies with Southampton. Solent CTA, CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace above the Bournemouth CTR delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions. At higher level this option may have interdependencies with Gatwick, Farnborough and Heathrow traffic.

Table 10: Option D08-E-C Baseline

6.2.3.3. Option D08-E-D

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option would overfly more communities than the baseline after take-off, as the route turns right. Newly overflown communities include New Milton, Barton on Sea and Milford on Sea After this point, this design option would overfly the Isle of Wight although this will likely be above 4000ft. Image shows the baseline (pink) and the option (orange) with PWC overlayed. 
	Air Quality	This design option would initially overfly the same communities as the baseline after take-off with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There will be more track miles anticipated with this option compared to the baseline and therefore greater impact on greenhouse gas and CO2 emissions.
	Capacity/ resilience	This option provides limited opportunity for increased capacity or resilience. Possible conflicts with Southampton with arrivals and departures.

Group	Impact	Qualitative Assessment
	Tranquillity	This option overflies a small section of the New Forest National Park, however considerably less of the Park would be overflown compared to the baseline. The Isle of Wight AONB would be overflown however aircraft are expected to be above 4000ft, but below 7000ft at this point. Image shows the baseline (pink) and the option (orange) with the NP (green) and AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	This option overflies different sites than the baseline after take-off, then similar amount but different sensitive sites. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (pink) and option (orange) flying over these sites. 
General aviation	Access	No increase or reduction in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity, or benefit to economic impact is anticipated. Increase in track miles, and therefore potential increase fuel costs.
	Fuel burn	Track miles are expected to be higher for traffic to the east between this option and the baseline. Therefore greater fuel burn is anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.

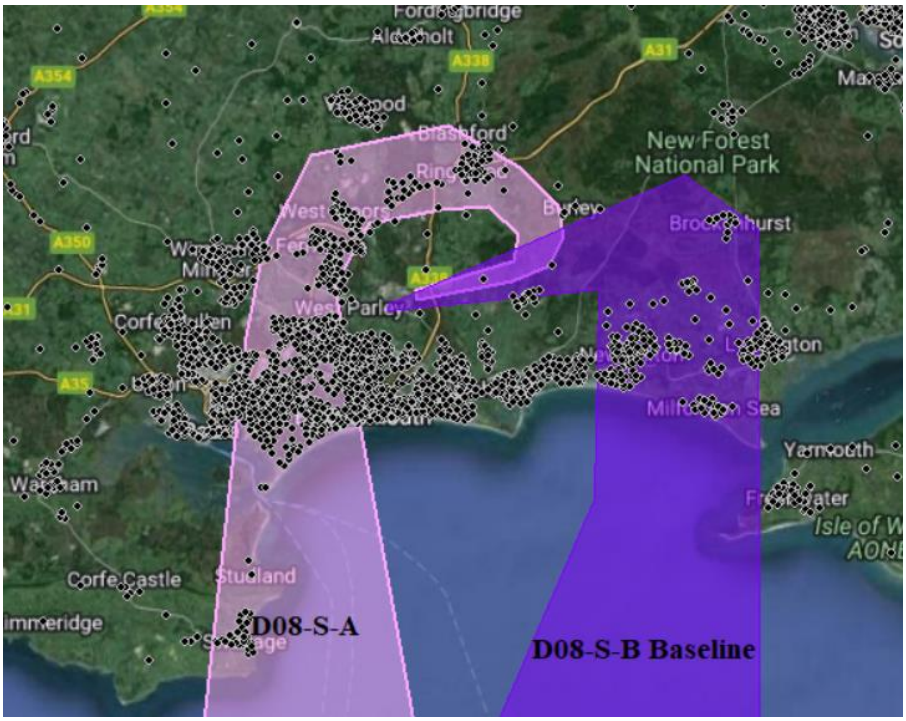
Group	Impact	Qualitative Assessment
service provider	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP, other than re writing AIP entries. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	No initial safety concerns at this stage.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of simplification, improving fuel efficiency, environmental sustainability objectives or reducing noise. It does however meet the safety objectives and is therefore partially aligned.
	Interdependencies, conflicts and trade-offs	Option D08-E-D shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace above the Bournemouth CTR delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions. At higher level this option may have interdependencies with Gatwick, Farnborough and Heathrow traffic.

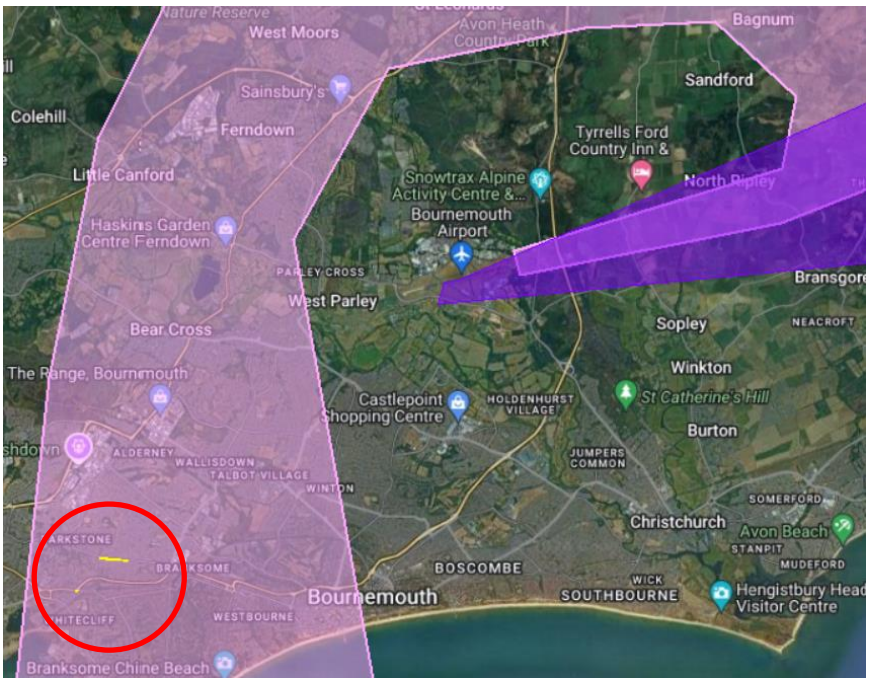
Table 11: Option D08-E-D

6.2.4. South Design Envelope

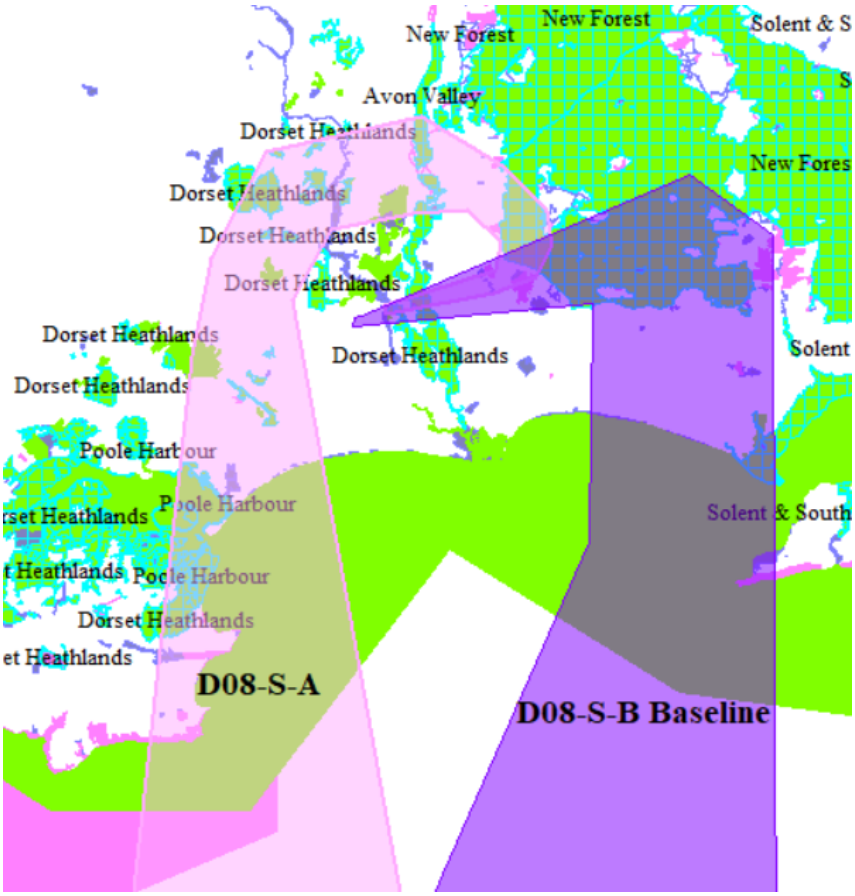
6.2.4.1. In the South Design Envelope for departures there are two options, D08-S-A Baseline and D08-S-B Baseline.

6.2.4.2. Option D08-S-A

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	As this design option is a wraparound, turning left after departure before turning south, it overflies significantly more people, and different communities than the baseline. Image shows the baseline (purple) and the options (pink) with PWC overlayed. 

Group	Impact	Qualitative Assessment
	Air Quality	This design option would overfly different communities than the baseline on departure and due to the wraparound, aircraft will be held lower for longer potentially having an impact on air quality. Additionally, this option overflies a AQMA at Ashley Road in Upper Parkstone. Image shows the baseline (purple) and the options (pink) with the AQMA highlighted in yellow within the red circle. 
Wider society	Greenhouse gas impact	As this design option is a wraparound there will be significantly more track miles between this option and the baseline and therefore greater impact on greenhouse gas and CO_2 emissions.
	Capacity/ resilience	Reduced capacity and resilience is anticipated.

Group	Impact	Qualitative Assessment
	Tranquillity	This option overflies less of the New Forest National Park than the baseline however will overfly a small portion of the Dorset AONB at the easterly tip. Image shows the baseline (purple) and the option (pink) with the NP (green) and AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	This option overflies more and different sensitive sites than the baseline. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (purple) and option (pink) flying over these sites. 
General aviation	Access	Increase in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity, or benefit to economic impact is anticipated.
	Fuel burn	There are significant changes in track length and therefore a greater impact on fuel burn is anticipated.

Group	Impact	Qualitative Assessment
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	Operational costs are anticipated with the initial deployment of this option for the Airport. This option would require increase in CAS, display maps, retraining of staff and therefore considerable costs anticipated.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	Departs over EG DO26 Lulworth which would cause a significant safety concern. Additionally, this route crosses the final approach for RWY 08 which may increase controller workload if aircraft held at 3000ft below the hold. In addition, possible conflict with aircraft on approach breaking off and executing a standard missed approach against traffic held at 3000ft as the standard missed approach climbs to 3000ft.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. This option does not contribute to the AMS objectives of safety, simplification, improving fuel efficiency, environmental sustainability objectives or reducing noise and is therefore not aligned.
	Interdependencies, conflicts and trade-offs	Option D08- S-A shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace above Bournemouth CTR delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions. The wraparound option also conflicts with traffic within the Bournemouth hold on final approach to RWY 08 and possibly with military aircraft operating in the Poole HLS area and within Poole Harbour.

Table 12: Option D08-S-A

6.2.4.3. Option D08-S-B Baseline

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities after take-off with no change to noise impact.
	Air Quality	This option would continue to overfly the same communities after take-off with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the New Forest National Park will be overflown. There would be no change in impact on New Forest National Park or tranquillity.
	Biodiversity	There are no additional biodiversity implications associated with retaining the baseline.
General aviation	Access	No change in CAS or access to it if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if this baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No commercial airline costs are anticipated, should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with this option for either the Airport or the ANSP.
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.

Group	Impact	Qualitative Assessment
All	Safety	No safety concerns should this baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.
	Interdependencies, conflicts and trade-offs	Option D08-S-B- Baseline shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace above Bournemouth CTR delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions.

Table 13: Option D08-S-B Baseline

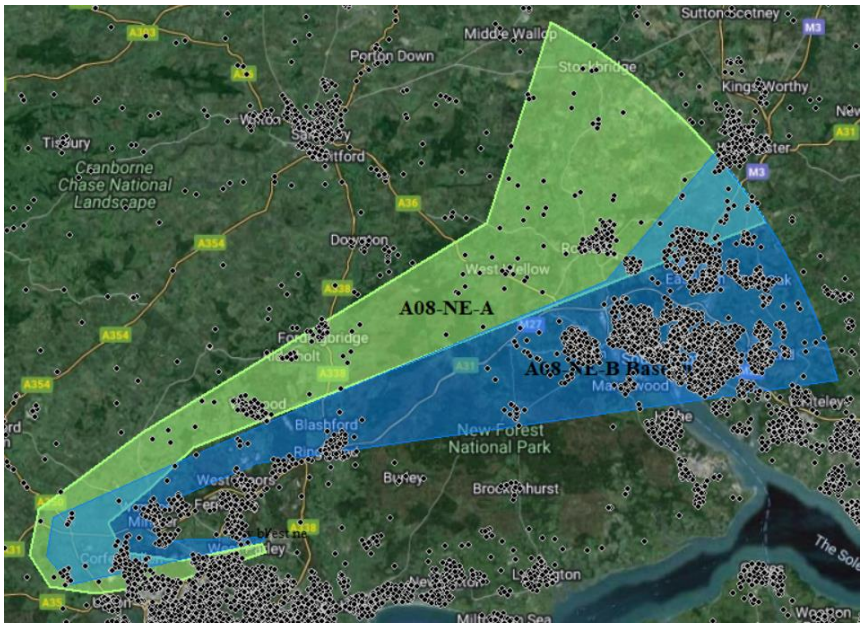
6.3. Runway 08 Arrivals

6.3.1. For RWY 08 there are three design envelopes for arrivals, Northeast, Southeast and South.

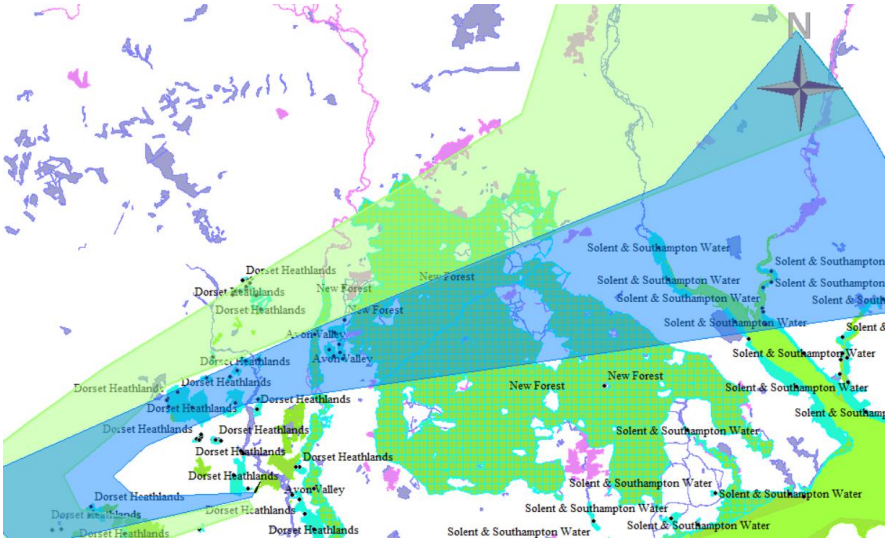
6.3.2. Northeast Design Envelope

6.3.2.1. In the Northeast Design Envelope for arrivals there are three options, A08-NE-A, A08-NE-B Baseline and A08-NE-C.

6.3.2.2. Option A08-NE-A

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option would initially arrive over the different communities and less densely populated areas compared to the baseline. Closer to arrival, and at a lower altitude, this option overflies similar communities to the baseline. The newly overflown areas would be of lower population density than the baseline. Newly overflown communities include Verwood, Alderholt, Fordingbridge and Sandy Balls Holiday Village. Image shows the baseline (blue) and the option (green) with PWC overlayed. 
	Air Quality	This design option would overfly the same communities as the baseline on arrival and below 1000ft with no change in impact to local air quality.
Wider society	Greenhouse gas impact	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to greenhouse gas and CO_2 emissions are anticipated.

Group	Impact	Qualitative Assessment
	Capacity/ resilience	Additional CAS required, which would, potentially, conflict with GA interests. FUA in this area would require reviewing or amending. Currently available 06:30-09:30 and 17:30-21:30 (winter) and 04:45-008:30 and 16:30-20:30 (summer).
	Tranquillity	This option arrives over a more northerly section of the New Forest National Park however marginally less of the Park would be overflown compared to the baseline. Both the baseline and the option fly over a small portion of the southerly tip of the CCAONB; the option flies over a slightly larger section. Image shows the baseline (blue) and the option (light green) with the NP (green) and AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	Initially aircraft would be flying over similar amount but different sections of sensitive sites. Closer to arrival, and at a lower altitude, this option overflies similar sites to the baseline. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (blue) and option (light green) flying over these sites. 
General aviation	Access	Increase in CAS is anticipated for this option potentially conflicting with GA interests.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	No significant benefits and minor impacts to fuel burn are anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.

Group	Impact	Qualitative Assessment
Service provider	Operational costs	Some operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP. This option contributes to the VOR rationalisation programme currently underway within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. This option would require an increase in CAS, and new maps for the radar displays.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	Safety concerns as this option is outside CAS but could potentially be addressed by increasing CAS boundaries. However, no safety concerns.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives simplification, improving fuel efficiency, but has the potential to reduce noise impact and meet safety objectives and is therefore partially aligned.
	Interdependencies, conflicts and trade-offs	Option A08-NE-A. shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace above Bournemouth CTR delegated to Bournemouth under certain conditions. IFR airways traffic arriving at Bournemouth is initially controlled by Solent who will transfer inbound traffic to Bournemouth on an agreed Silent Handover or with coordination against their own traffic.

Table 14: Option A08-NE-A

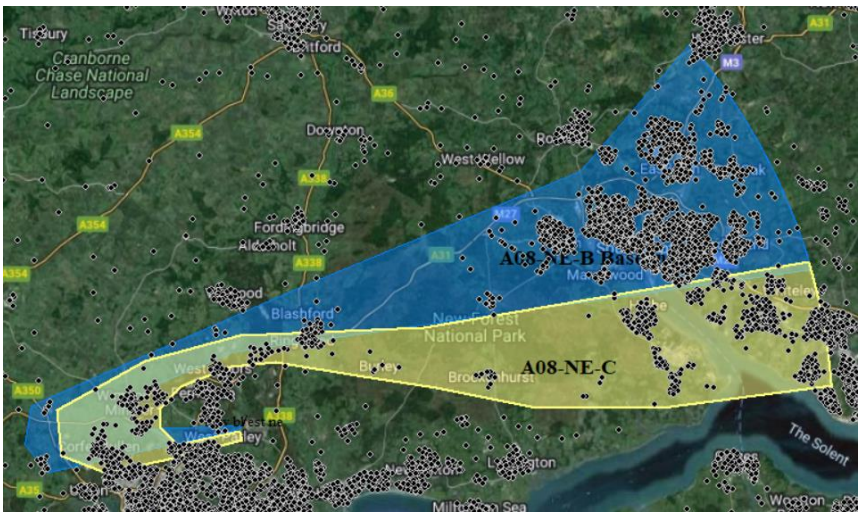
6.3.2.3. Option A08-NE-B Baseline

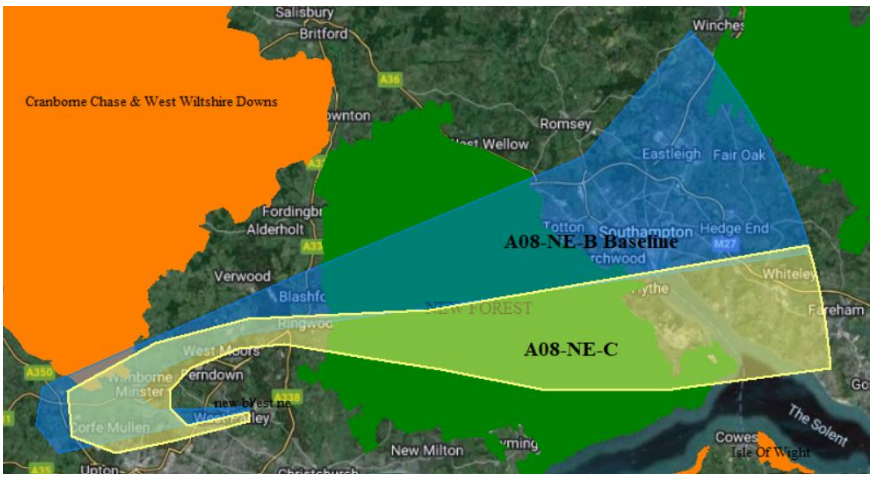
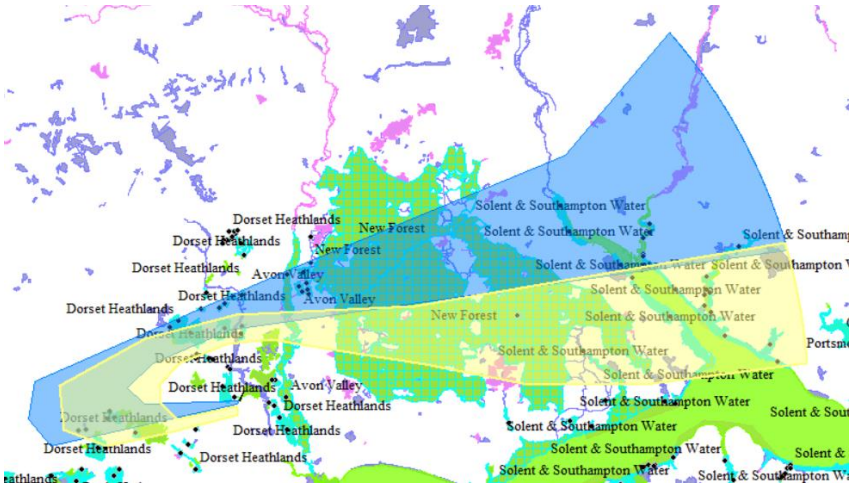
Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities upon arrival with no change to noise impact.
	Air Quality	This option would continue to overfly the same communities upon arrival with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.

Group	Impact	Qualitative Assessment
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the New Forest National Park will be overflown. There would be no change in impact on New Forest National Park or tranquillity.
	Biodiversity	There are no additional biodiversity implications associated with retaining the baseline.
General aviation	Access	No change in CAS, or access to it, if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if this baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No commercial airline costs are anticipated should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with this option for either the Airport or the ANSP.
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.
All	Safety	No safety concerns should this baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.
	Interdependencies, conflicts and trade-offs	Option A08- NE-B Baseline shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace above Bournemouth CTR delegated to Bournemouth under certain conditions. IFR airways traffic arriving at Bournemouth is initially controlled by Solent who will transfer inbound traffic to Bournemouth on an agreed Silent Handover or with coordination against their own traffic.

Table 15: Option A08-NE-B Baseline

6.3.2.4. Option A08-NE-C

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option would initially arrive over the different communities and less densely populated areas compared to the baseline. Closer to arrival, and at a lower altitude, this option overflies similar communities to the baseline. The newly overflown areas would be of lower population density than the baseline. Newly overflown communities include Brockenhurst and Burley. Image shows the baseline (blue) and the options (yellow) with PWC overlayed. 
	Air Quality	This design option would overfly the same communities as the baseline on arrival, below 1000ft, with no change in impact to local air quality.
Wider society	Greenhouse gas impact	Little to no difference in track miles between this option and current operations. No significant benefits or impacts to greenhouse gas and CO_2 emissions are anticipated.
	Capacity/ resilience	Limited opportunity for increased capacity or resilience is anticipated. Additional CAS may be required, additional fuel burn, potential conflict with Southampton departures and arrivals.

Group	Impact	Qualitative Assessment
	Tranquillity	This option arrives over a more southerly, section of the New Forest National Park, similar size area of the Park would be overflown compared to the baseline. Both the baseline and the option fly over a small portion of the southerly tip of the CCAONB; the option flies over a marginally smaller section. Image shows the baseline (blue) and the option (yellow) with the NP (green) and AONB (orange) underneath. 
	Biodiversity	Initially aircraft would be flying over a greater amount and different sections of sensitive sites. Closer to arrival, and at a lower altitude, this option overflies similar sites to the baseline. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (blue) and option (yellow) flying over these sites. 
General aviation	Access	Increase in CAS is anticipated for this option.

Group	Impact	Qualitative Assessment
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	No significant benefits and minor impacts to fuel burn are anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP. This option contributes to the VOR rationalisation programme currently underway within the UK as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal. SIM time for example.
All	Safety	Possible integration with Southampton, however no safety concerns.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of simplification , improving fuel efficiency, but has the potential to reduce noise impact and meet the safety objectives and is therefore partially aligned.
	Interdependencies, conflicts and trade-offs	Option A08- NE-C shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace above Bournemouth CTR delegated to Bournemouth under certain conditions. IFR airways traffic arriving at Bournemouth is initially controlled by Solent who will transfer inbound traffic to Bournemouth on an agreed Silent Handover or with coordination against their own traffic.

Table 16: Option A08-NE-C

6.3.3. Southeast Design Envelope

6.3.3.1. In the Southeast Design Envelope for arrivals there are two options, A08-SE-A Baseline and A08-SE-B.

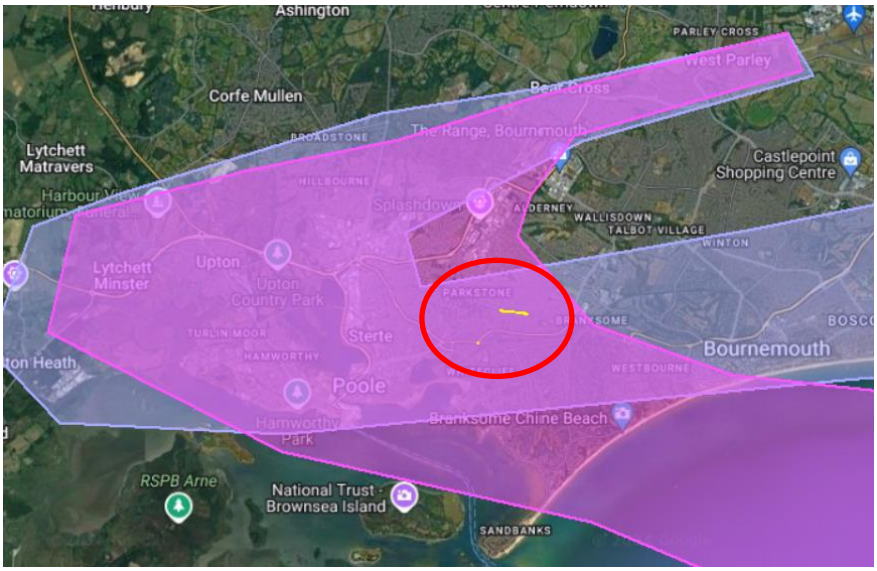
6.3.3.2. Option A08-SE-A Baseline

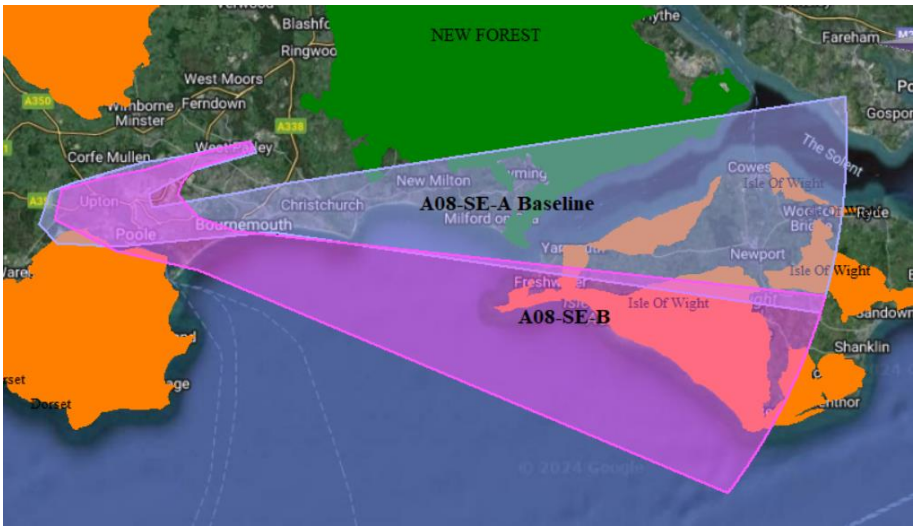
Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities upon arrival with no change to noise impact.
	Air Quality	This option would continue to overfly the same communities upon arrival with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the New Forest National Park will be overflown. There would be no change in impact on New Forest National Park or tranquillity. Arrivals to RWY 08 from this direction only impact a small part of the New Forest to the southwest of the park.
	Biodiversity	There are no additional biodiversity implications associated with retaining the baseline.
General aviation	Access	No change in CAS, or access to it, if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if this baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.

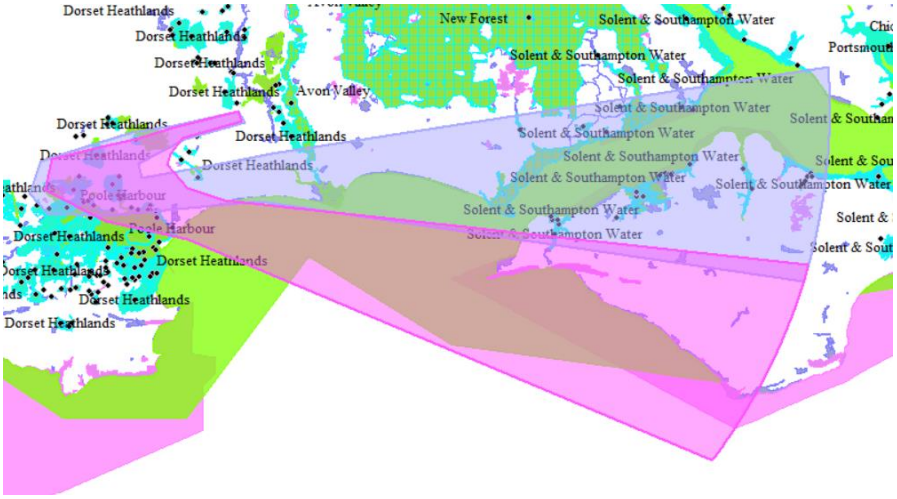
Group	Impact	Qualitative Assessment
	Other costs	No commercial airline costs are anticipated should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP.
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.
All	Safety	No safety concerns should this baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.
	Interdependencies, conflicts, and trade-offs	Option A08-SE – C Baseline shares significant interdependencies with Southampton. Solent CTA2 sits to the east and above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth when both Solent and Bournemouth are operating radar. Solent arrival and departure traffic routing to and from the south and east will need coordinating on a tactical basis. Possible conflict with the Military operating in D 031, operating in the vicinity of Poole HLS and over the sea to the south of Bournemouth.

Table 17: Option A08-SE-A Baseline

6.3.3.3. Option A08-SE-B

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option would initially arrive over the different communities and less densely populated areas compared to the baseline. Closer to arrival, and at a lower altitude, this option overflies similar communities to the baseline. Newly overflown communities include Freshwater and Canford Cliffs. Image shows the baseline (purple) and the options (pink) with PWC overlayed. 
	Air Quality	This option and the baseline fly over the AQMA at Ashley Road in Upper Parkstone. Image shows the baseline (purple) and the options (pink) with the AQMA highlighted in yellow within the red circle. 
Wider society	Greenhouse gas impact	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to greenhouse gas and CO2 emissions are anticipated.

Group	Impact	Qualitative Assessment
	Capacity/ resilience	Increased capacity or resilience is not anticipated. Conflict with Portsmouth Danger Area, increase in CAS required, conflict with Southampton departures and arrivals.
	Tranquillity	This option does not overfly the New Forest National Park as the baseline does, however it will overfly a small portion of the Dorset AONB, marginally less than the baseline, and the Isle of Wight AONB, on arrival. Image shows the baseline (purple) and the option (pink) with the NP (green) and AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	Initially aircraft would be flying over different sections, and fewer sensitive sites. Closer to arrival, and at a lower altitude, this option overflies similar sites to the baseline.However it would avoid flying over Solent and Southampton Water Ramsar site and over Highcliffe to Milford cliffs SSSI. A newly flown over SSSIs would be Compton Chine to Steephill Cove and Headon Warren and West High Down on the Isle of Wight. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (purple) and option (pink) flying over these sites. 
General aviation	Access	Possible increase in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	There are significant changes in track length and therefore a greater impact on fuel burn is anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.

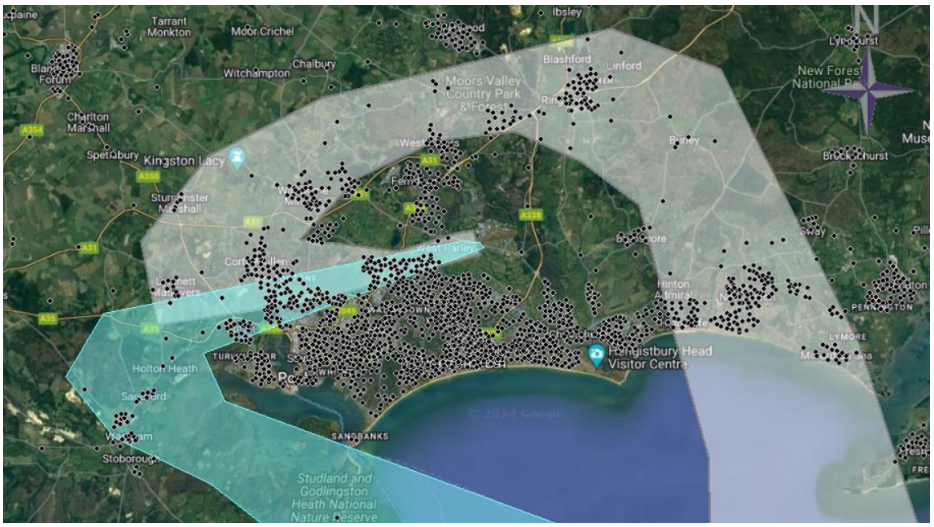
Group	Impact	Qualitative Assessment
service provider	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	The scope and scale of any training requirement will be assessed further during the Stage 3 Full Options Appraisal. In addition, the change in airspace would require an additional ACP and therefore additional costs.
All	Safety	Arrives over Portsmouth Danger Area, possibly requirement for an increase in CAS, and this option will conflict with Southampton departures and arrivals.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. This option does not contribute to the AMS objectives of safety, simplification or improving fuel efficiency. However it does contribute to reducing noise and some environmental sustainability objectives and is therefore partially aligned.
	Interdependencies, conflicts, and trade-offs	Option A08- SE-B shares significant interdependencies with Southampton. Solent CTA2 sits to the east of Bournemouth with Bournemouth CTR above from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. Solent arrival and departure traffic routing to and from the south will need coordinating on a tactical basis. Possible conflict with the Military operating in D 031, operating in the vicinity of Poole HLS and over the sea to the south of Bournemouth.

Table 18: Option A08-SE-B

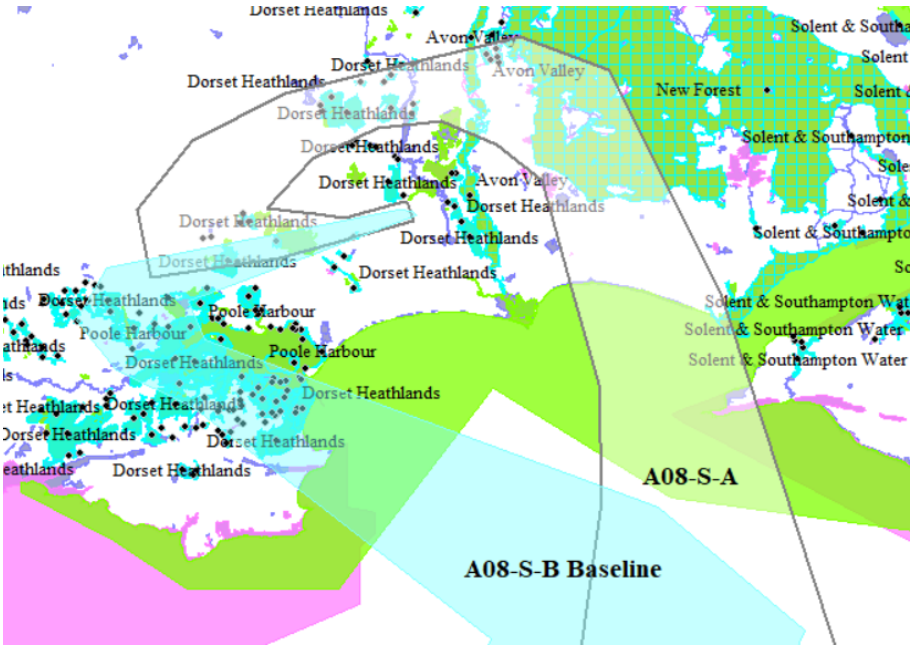
6.3.4. South Design Envelope

6.3.4.1. In the South Design Envelope for arrivals there are three options, A08-S-A, A08-S-B Baseline and A08-S-C.

6.3.4.2. Option A08-S-A

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	As this design option is a wraparound, it overflies significantly more communities than the baseline. Newly overflown communities potentially include Colehill, Winbourne Minster, Ashington and Corfe Mullen. Image shows the baseline (turquoise) and the option (white) with PWC overlayed. 
	Air Quality	This design option would overfly different, and more communities compared with the baseline, on arrival below 1000ft, however no change in impact to local air quality.
Wider society	Greenhouse gas impact	As this design option is a wraparound there will be significantly more track miles between this option and the baseline and therefore a greater impact on greenhouse gas and CO_2 emissions.
	Capacity/ resilience	Reduced capacity and resilience is anticipated.

Group	Impact	Qualitative Assessment
	Tranquillity	This option overflies Cranborne Chase AONB at the southern tip and the New Forest National Park, and therefore overflies more areas of tranquillity than the baseline. Additionally it could potentially fly over the Isle of Wight AONB at the westerly tip. Image shows the baseline (turquoise) and the option (white) with the NP (green) and AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	Initially aircraft would be flying over different sites and different sections of sensitive sites. Closer to arrival, and at a lower altitude, this option overflies similar sites to the baseline This option overflies New Forest, Avon Valley and Dorset Heathlands sites in addition to the Highcliffe to Milford cliffs. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (turquoise) and option (white) flying over these sites. 
General aviation	Access	Potential increase in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	There are significant changes in track length and therefore a greater impact on fuel burn is anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.

Group	Impact	Qualitative Assessment
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	Arrives over EG DO36, Portsmouth Danger Area.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. This option does not contribute to the AMS objectives of safety, simplification , improving fuel efficiency, environmental sustainability objectives or reducing noise and is therefore not aligned.
	Interdependencies, conflicts, and trade-offs	Option A08-S-A shares significant interdependencies with Southampton. Solent CTA sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth when both Solent and Bournemouth are operating radar. Solent arrival and departure traffic routing to and from the south will need coordinating on a tactical basis. Conflict with Bournemouth departures as the wraparound will cross the outbound track for RWY 08 and traffic holding the BIA

Table 19: Option A08-S-A

6.3.4.3. Option A08-S-B Baseline

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities after take-off with no change to noise impact.
	Air Quality	This option would continue to overfly the same communities after take-off with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.

Group	Impact	Qualitative Assessment
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the Dorset AONB will be overflown. There would be no change in impact on the AONB or tranquillity.
	Biodiversity	There are no additional biodiversity implications associated with retaining the baseline.
General aviation	Access	No change in CAS, or access to it, if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if the baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No commercial airline costs are anticipated should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP.
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.
All	Safety	No safety concerns should the baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.

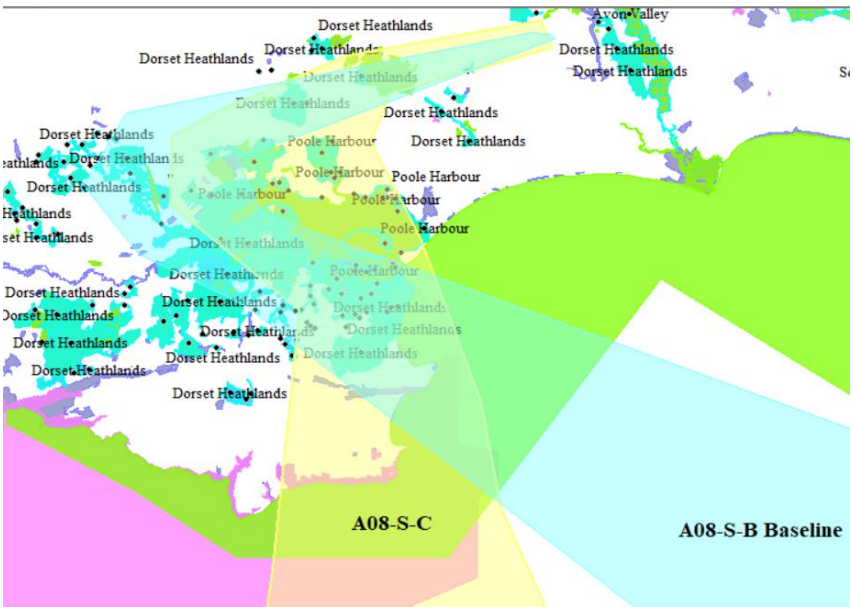
Group	Impact	Qualitative Assessment
	Interdependencies, conflicts and trade offs	Option A08- S-B Baseline shares significant interdependencies with Southampton. Solent CTA sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth when both Solent and Bournemouth are operating radar. Solent arrival and departure traffic routing to and from the south will need coordinating on a tactical basis or via the established Silent Handover procedures. Possible conflict with the Military operating in D 031, operating in the vicinity of Poole HLS and over the sea to the south of Bournemouth.

Table 20: Option A08-S-B Baseline

6.3.4.4. Option A08-S-C

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option overflies more communities that the baseline. Newly flown over areas would include Poole, Hamworthy and Upton. Image shows the baseline (turquoise) and the options (yellow) with PWC overlayed. 
	Air Quality	This design option would overfly more communities than the baseline on departure, however no changes below 1000ft, and therefore no change in impact to local air quality. This option does overfly the AQMA on Bournemouth road (A35) in Lower Parkstone.

Group	Impact	Qualitative Assessment
Wider society	Greenhouse gas impact	Potential for a reduction in track miles as the route is more direct, therefore potential benefits to greenhouse gas and CO_2 emissions are anticipated.
	Capacity/ resilience	This option is broadly similar to the baseline so limited opportunity for increased capacity or resilience is anticipated.
	Tranquillity	This option overflies approximately the same square miles and similar areas of the Dorset AONB as the baseline. However, the southeast section of the AONB would be newly overflown. Image shows the baseline (turquoise) and the option (yellow) with the AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	Initially aircraft would be flying over different sites and different sections of sensitive sites. Closer to arrival, and at a lower altitude, this option overflies similar sites to the baseline This option overflies Dorset Heathlands and Poole Harbour as does the baseline. Different sections of Poole Harbour would be overflown. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (turquoise) and option (yellow) flying over these sites. 
General aviation	Access	No increase or reduction in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	Potential for a reduction in track miles as the route is more direct, therefore potential benefits to reduce fuel burn.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.

Group	Impact	Qualitative Assessment
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	Arrives over EG D031 Portland. Due to flexible levels of D031, aircraft may have extended patterns to the north and northwest outside CAS to ensure a stable approach, commercial aircraft are therefore routed outside CAS in an area of intense GA activity and therefore safety concern.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of safety, simplification , but may contribute to improving fuel efficiency, and reducing noise and is therefore partially aligned.
	Interdependencies, conflicts and trade offs	Option A08-S-C shares significant interdependencies with Southampton. Solent CTA sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth when both Solent and Bournemouth are operating radar. Solent arrival and departure traffic routing to and from the south will need coordinating on a tactical basis or via the established Silent Handover procedures. Possible conflict with the Military operating in D 031, operating in the vicinity of Poole HLS and over the sea to the south of Bournemouth.

Table 21: Option A08-S-C

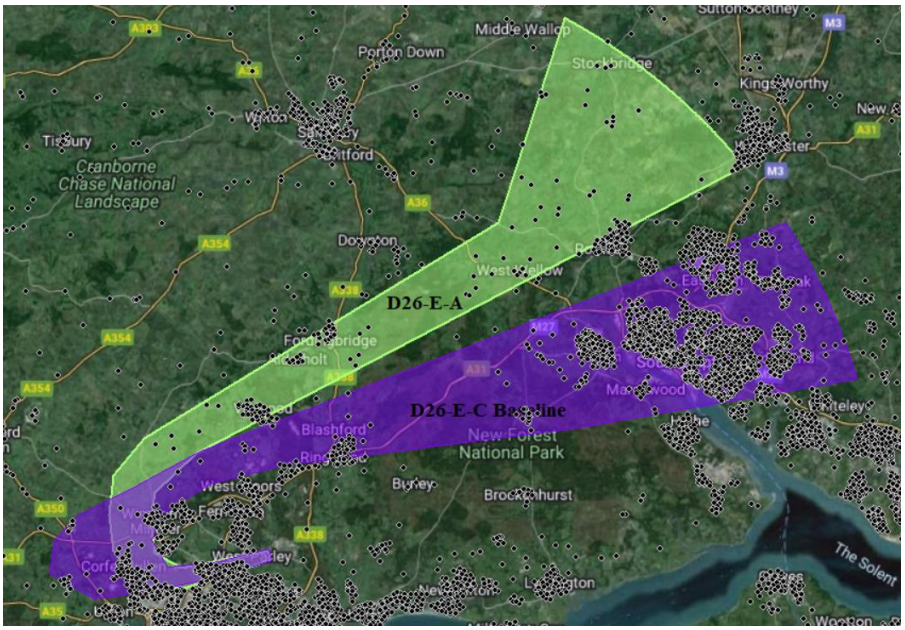
6.4. Runway 26 Departures

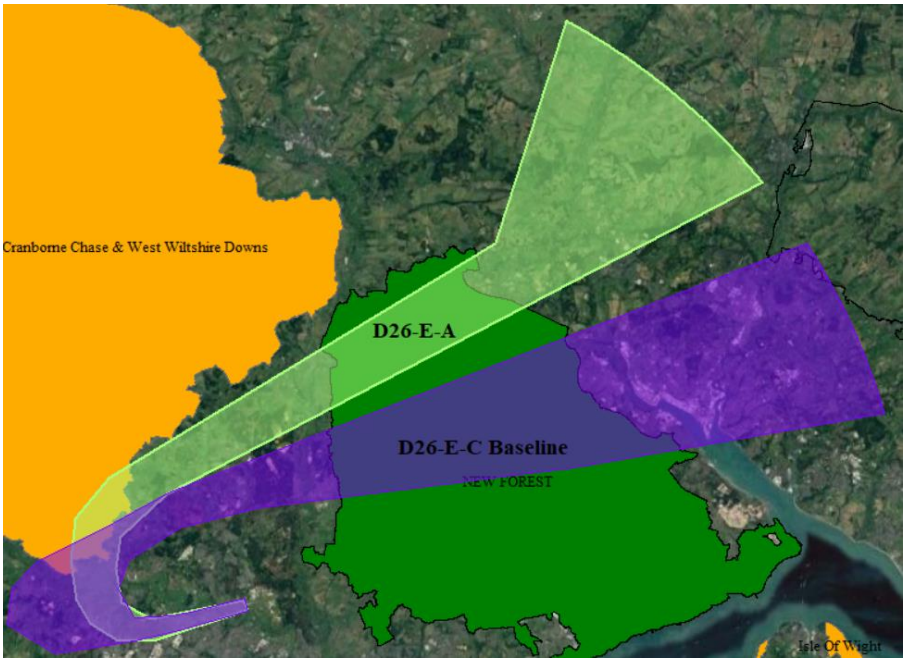
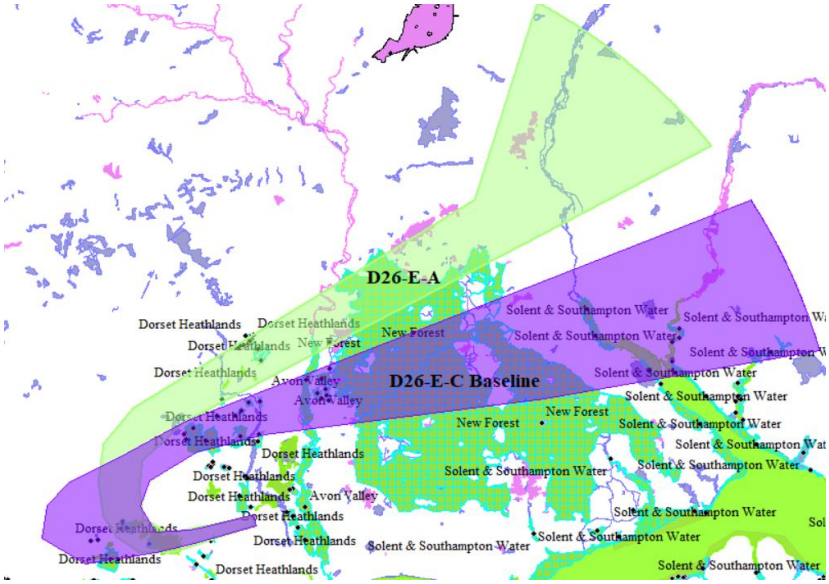
6.4.1. For RWY 26 there are two design envelopes for departures, East and South.

6.4.2. East Design Envelope

6.4.2.1. In the East Design Envelope for departures there are four options: D26-E-A and D26-E-C Baseline, D26-E-D and D26-E-E.

6.4.2.2. Option D26-E-A

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option would overfly a similar amount of communities as the baseline after take-off, before the route turns right. This option would fly over fewer communities than the baseline overall. Newly overflown communities include Verwood, Alderholt and Fordingbridge. Image shows the baseline (purple) and the option (green) with PWC overlayed. 
	Air Quality	This design option would initially overfly the same communities as the baseline after take-off, with no change in impact to local air quality. Before the right turn, aircraft would be above 1000ft.
Wider society	Greenhouse gas impact	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to greenhouse gas and CO_2 emissions are anticipated.
	Capacity/ resilience	Additional CAS required, which would, potentially, conflict with GA interests. FUA in this area would require reviewing or amending. Currently available 06:30-09:30 and 17:30-21:30 (winter) and 04:45-008:30 and 16:30-20:30 (summer).

Group	Impact	Qualitative Assessment
	Tranquillity	This option overflies the northerly section of the New Forest National Park, however less of the Park would be overflown compared to the baseline, it will also overfly a small section of the Cranborne Chase AONB at its southern end. Image shows the baseline (purple) and the option (green) with the NP (green) and AONB (orange) underneath. 
	Biodiversity	This option overflies similar sites to the baseline after take-off, then similar amount but different sections of sensitive sites. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (purple) and option (light green) flying over these sites. 

Group	Impact	Qualitative Assessment
General aviation	Access	Possible increase in CAS is anticipated for this option which would impact the GA community.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	Track miles are not expected to be higher for traffic to the east between this option and the baseline. No significant benefits and minor impacts to fuel burn are anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	Possible conflict with Southampton, London Heathrow and London Gatwick departures. However no safety concerns.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of simplification but does contribute towards improving fuel efficiency and reducing noise and is therefore partially aligned.

Group	Impact	Qualitative Assessment
	Interdependencies, conflicts and trade offs	Option D26-E-A shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace above the CTR delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions. At higher level this option may have interdependencies with Gatwick, Farnborough and Heathrow traffic.

Table 22: Option D26-E-A

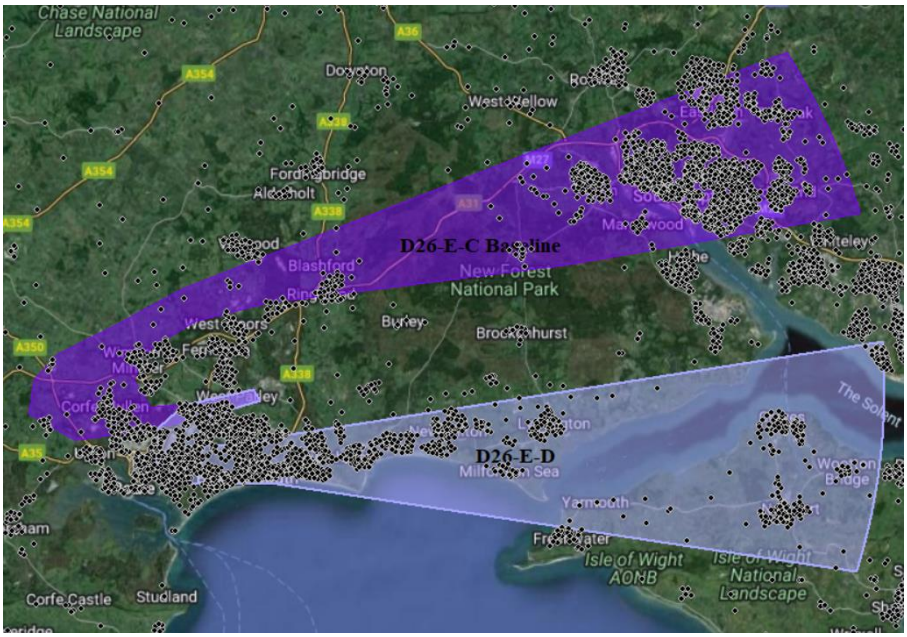
6.4.2.3. Option D26-E-C Baseline

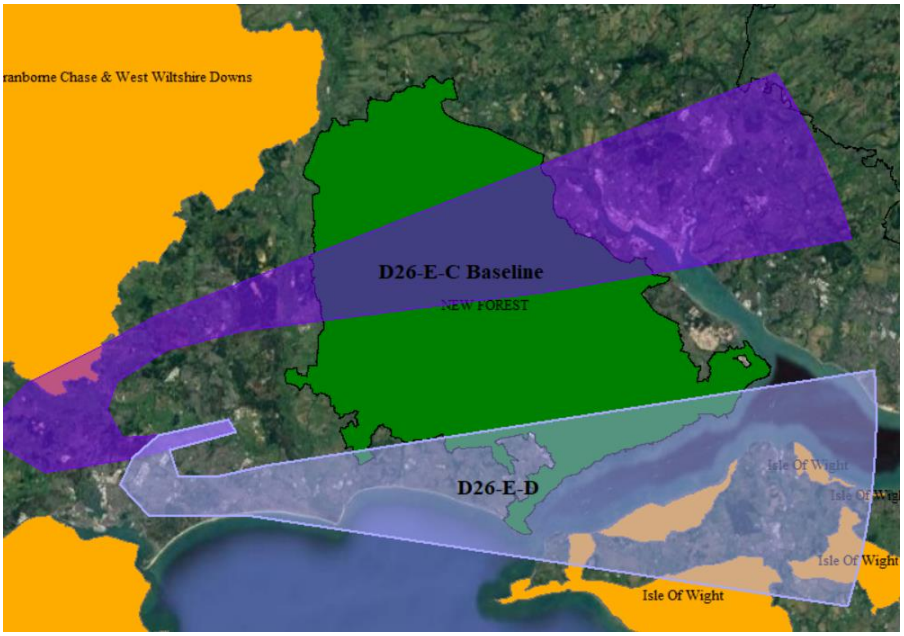
Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities after take-off with no change to noise impact.
	Air Quality	This option would continue to overfly the same communities after take-off with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the New Forest National Park will be overflown. There would be no change in impact on New Forest National Park or tranquillity.
	Biodiversity	There are no additional biodiversity implications associated with retaining the baseline.
General aviation	Access	No change in CAS or access to it if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.

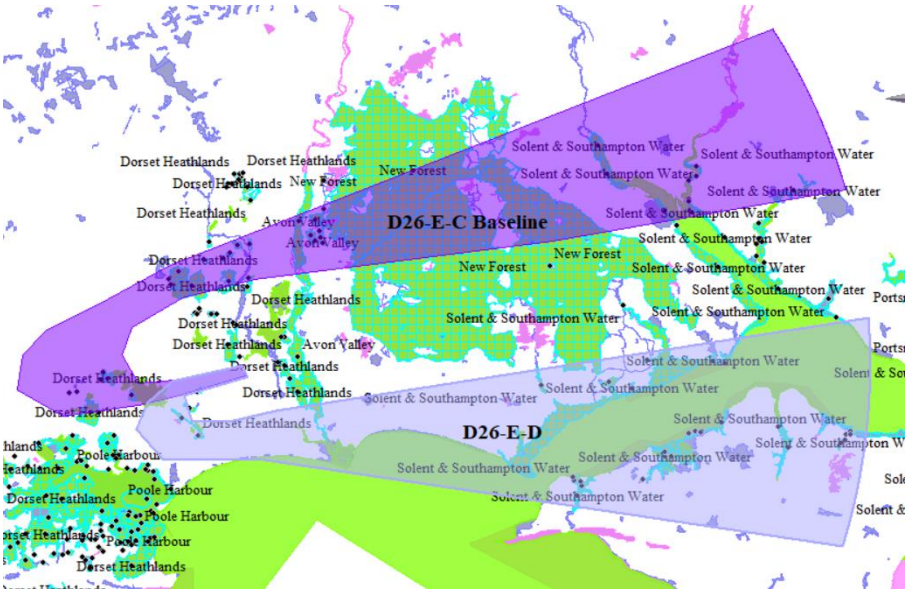
Group	Impact	Qualitative Assessment
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if this baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No commercial airline costs are anticipated should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP.
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.
All	Safety	No safety concerns should this baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.
	Interdependencies, conflicts and trade offs	Option D26-E-C baseline shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions. At higher level this option may have interdependencies with Gatwick, Farnborough and Heathrow traffic.

Table 23: Option D26-E-C Baseline

6.4.2.4. Option D26-E-D

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option would overfly different communities to the baseline as the route turns left. Significantly more densely populated areas would be overflown. Newly overflown communities include Bournemouth, Boscombe and Christchurch, compared with the baseline. Image shows the baseline (purple) and the option (light purple) with PWC overlayed. 
	Air Quality	This design option would initially overfly the same communities as the baseline after take-off with no change in impact to local air quality. Before the right turn, aircraft would be above 1000ft.
Wider society	Greenhouse gas impact	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to greenhouse gas and CO_2 emissions are anticipated.
	Capacity/ resilience	Limited opportunity for increased capacity or resilience is anticipated. Conflict with Southampton and Bournemouth arrivals from the south.

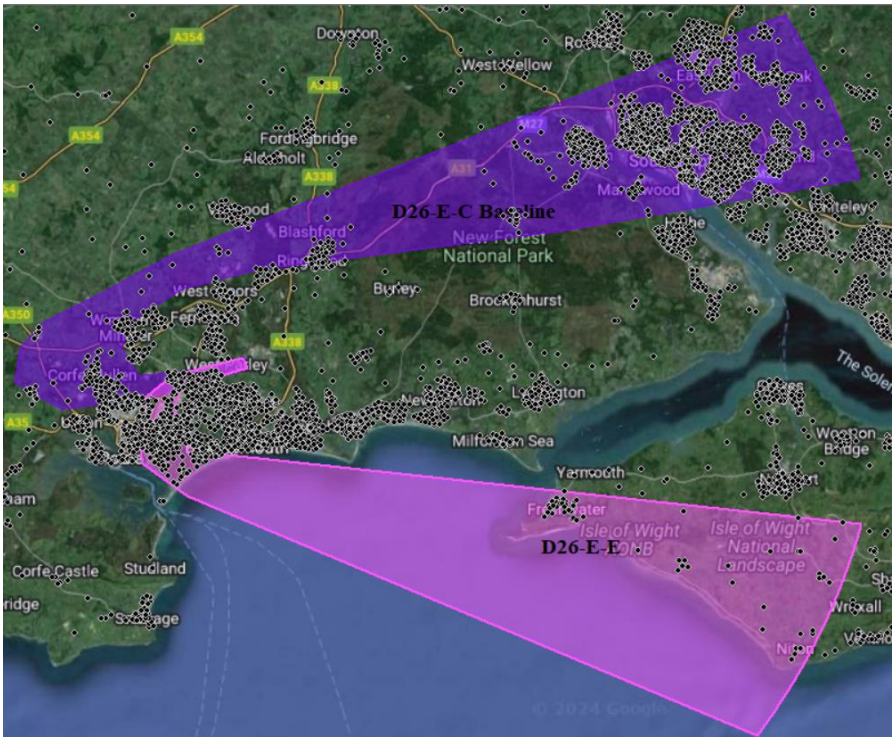
Group	Impact	Qualitative Assessment
	Tranquillity	This option overflies the southerly section of the New Forest National Park, however less of the Park would be overflown compared to the baseline. It would overfly the Isle of Wight however; aircraft are likely to be above 4000ft at this point. Image shows the baseline (purple) and the option (blue) with the NP (green) and AONB (orange) underneath. 

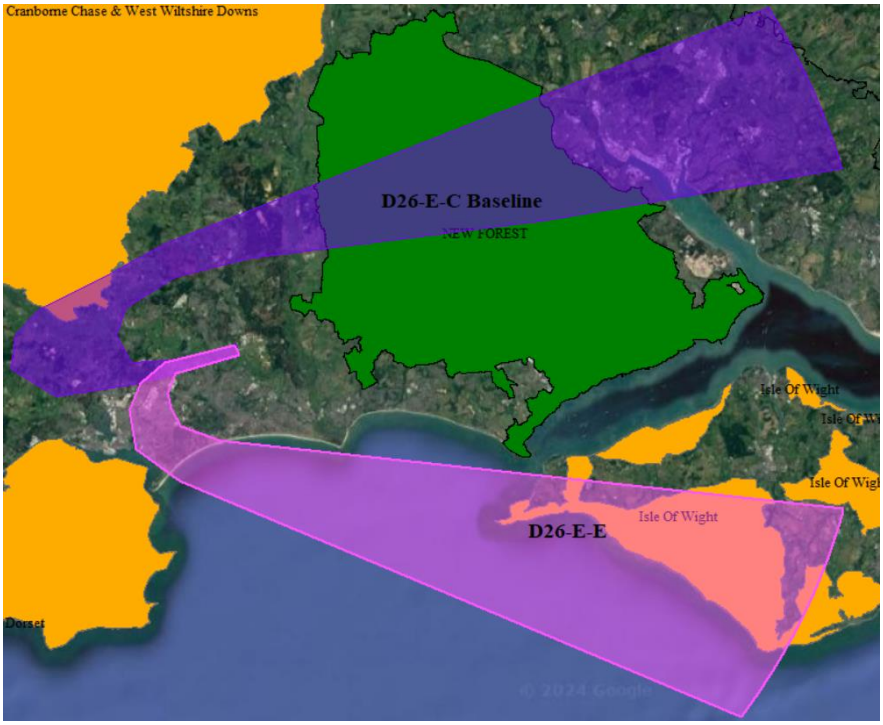
Group	Impact	Qualitative Assessment
	Biodiversity	This option overflies different sites than the baseline after take-off, then similar amount but different sensitive sites. This option overflies the Solent and Southampton Water, the Highcliffe to Milford Cliffs, Yar Estuary and Boulder and Hamstead cliffs. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (dark purple) and option (light purple) flying over these sites. 
General aviation	Access	No increase or reduction in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	Track miles are not expected to be higher for traffic to the east between this option and the baseline. No significant benefits and minor impacts to fuel burn are anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.

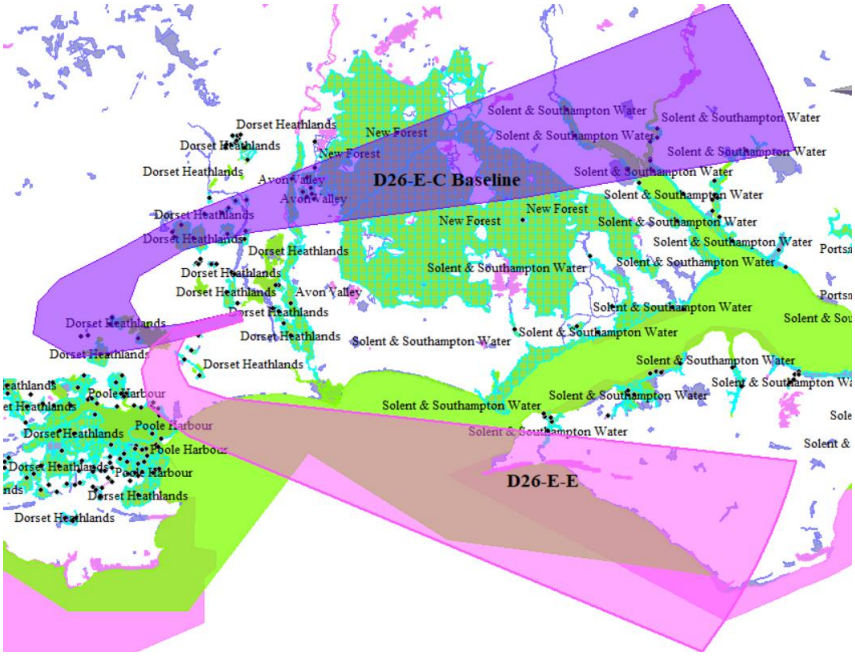
Group	Impact	Qualitative Assessment
service provider	Operational costs	Operational costs are anticipated with the initial deployment of this option for the Airport. Additional SIM times for ATCOs would be required. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	Conflict with Southampton and Bournemouth arrivals from the south. However no safety concerns.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of simplification, improving fuel efficiency, or reducing noise. It does however meet the safety and some environmental sustainability objectives and is therefore partially aligned.
	Interdependencies, conflicts and trade offs	Option D26-E-D shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions. At higher level this option may have interdependencies with Gatwick, Farnborough and Heathrow traffic.

Table 24: Option D26-E-D

6.4.2.5. Option D26-E-E

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option would overfly different communities to the baseline as the route turns left, additionally a greater number of communities would be overflown compared with the baseline at low altitudes and shortly after take-off. Newly overflown communities include Newtown and Parkstone, compared with the baseline. As this option is only briefly overland, fewer communities would be overflown overall and at a higher altitude compared with the baseline. Image shows the baseline (purple) and the option (pink) with PWC overlayed. 
	Air Quality	This design option would initially overfly the same communities as the baseline after take-off with no change in impact to local air quality. Before the left turn, aircraft would be over 1000ft.
Wider society	Greenhouse gas impact	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to greenhouse gas and CO_2 emissions are anticipated.
	Capacity/ resilience	This design option would route outside current CAS boundaries and therefore increased CAS would be required.

Group	Impact	Qualitative Assessment
	Tranquillity	This option does not overfly the National Park or AONB at lower altitudes, however, would overfly the Isle Of Wight AONB at a higher altitude between 4000ft and 7000ft. Image shows the baseline (purple) and the option (pink) with the NP (green) and AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	This option overflies different sites than the baseline after take-off, then different sections of sensitive sites; fewer sites are flown over due to this option reaching the sea sooner. This option overflies the Highcliffe to Milford cliffs and a small section of the Poole Harbour. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (purple) and option (pink) flying over these sites. 
General aviation	Access	Increase in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	Track miles are not expected to be higher for traffic to the east between this option and the baseline. Minor increase to fuel burn anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.

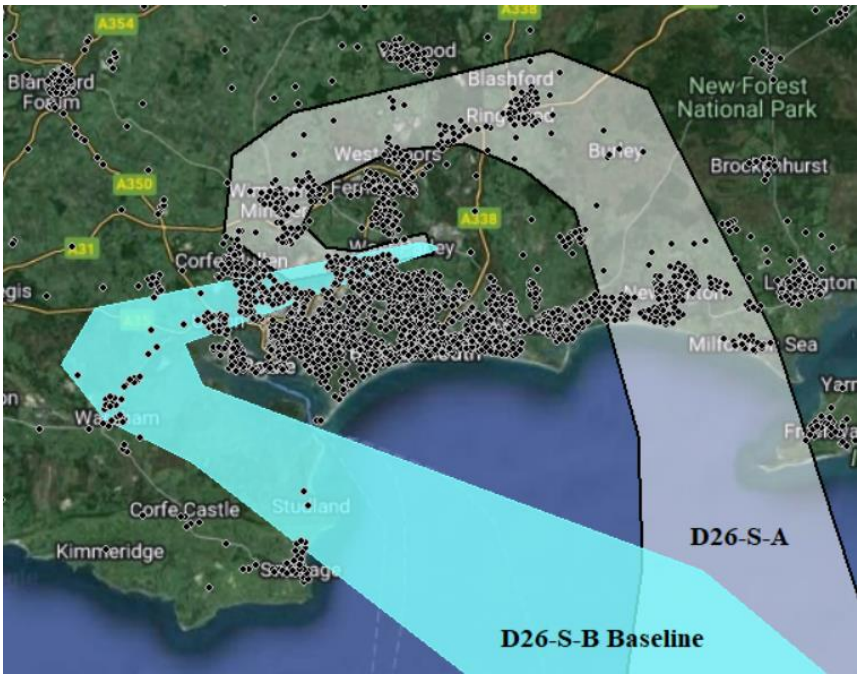
Group	Impact	Qualitative Assessment
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	Operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP, such as additional airspace costs and maps. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal. SIM time costs.
All	Safety	This design option would route outside CAS and therefore increased CAS would be required. It would conflict with Portsmouth DA and also with Southampton and Bournemouth arrivals and departures.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of safety, simplification, improving fuel efficiency, however, may contribute to reducing noise and some environmental sustainability objectives and is therefore partially aligned.
	Interdependencies, conflicts and trade offs	Option D26-E-E shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions. It may also conflict with military traffic operating at Poole HLS and over Poole Harbour.

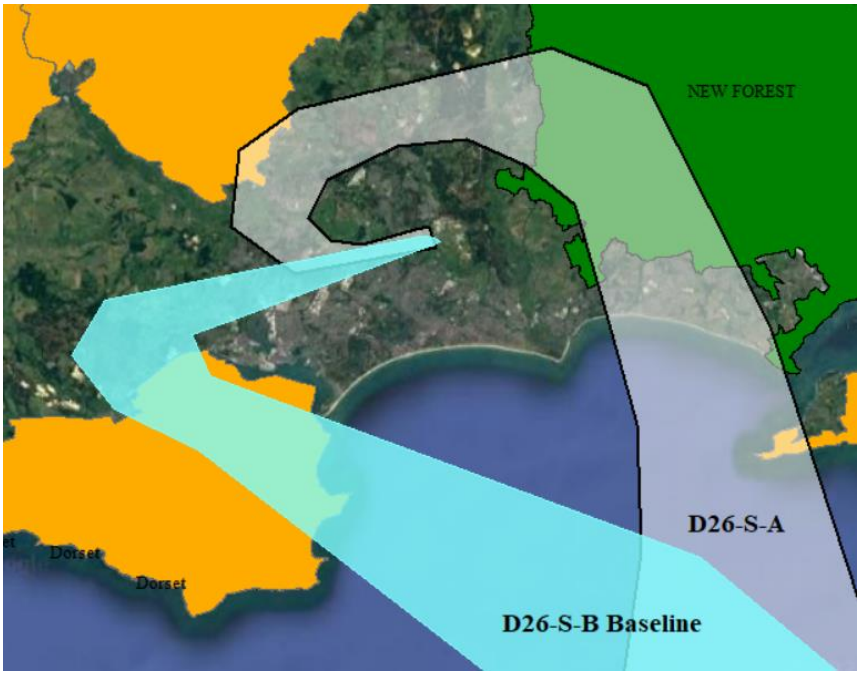
Table 25: Option D26-E-E

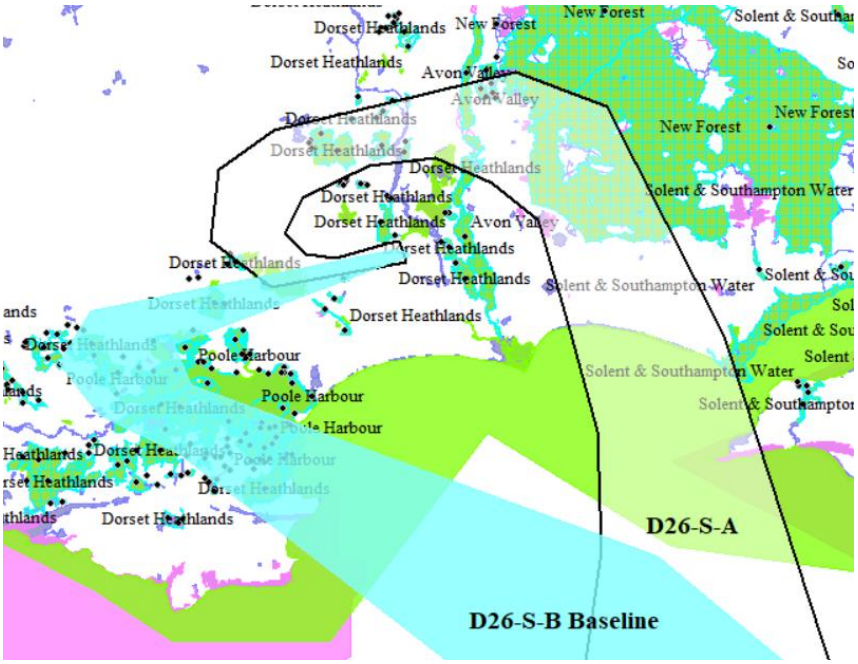
6.4.3. South Design Envelope

6.4.3.1. In the South Design Envelope for departures there are three options: D26-S-A and D26-S-B Baseline, D26-S-C.

6.4.3.2. Option D26-S-A

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	As this design option is a wraparound and overflies more land, it therefore overflies more people than the current operation. As aircraft may need to be kept lower for longer there would be significant noise implications. Image shows the baseline (turquoise) and the option (white) with PWC overlayed. 
	Air Quality	This design option would overfly different communities than the baseline upon arrival below 1000ft, however no change in impact to local air quality.
Wider society	Greenhouse gas impact	As this design option is a wraparound there will be significantly more track miles between this option and the baseline and therefore greater impact on greenhouse gas and CO_2 emissions.
	Capacity/ resilience	Increased capacity or resilience is not anticipated. More CAS would be required and, subsequently, involve some restriction to GA community. Aircraft will be kept lower levels for longer, therefore noise implications.

Group	Impact	Qualitative Assessment
	Tranquillity	This option overflies Cranborne Chase AONB at the southern tip and the New Forest National Park and therefore overflies more areas of tranquillity than the baseline. However, this option avoids the Dorset AONB. Image shows the baseline (turquoise) and the option (white) with the NP (green) and AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	This option overflies different sites than the baseline after take-off, then similar amount but different sensitive sites compared to the baseline. This option overflies New Forest, Avon Valley and Dorset Heathlands in addition to the Highcliffe to Milford cliffs. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (turquoise) and option (white) flying over these sites. 
General aviation	Access	Potential increase in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	There are significant changes in track length and therefore a greater impact on fuel burn is anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.

Group	Impact	Qualitative Assessment
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	Additional operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP, for example fuel burn, track miles. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	Aircraft will be at lower levels for longer, hold above and therefore there is an increase in potential for level busts. There is also potential for interaction with the Portsmouth DAs.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of safety, simplification, improving fuel efficiency, environmental sustainability objectives or reducing noise and is therefore not aligned.
	Interdependencies, conflicts and trade offs	Option D26-S-A shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions. Due to the wraparound nature of this swathe, there would be conflict with aircraft arriving on RWY 26 and possibly with traffic holding at the BIA.

Table 26: Option D26-S-A

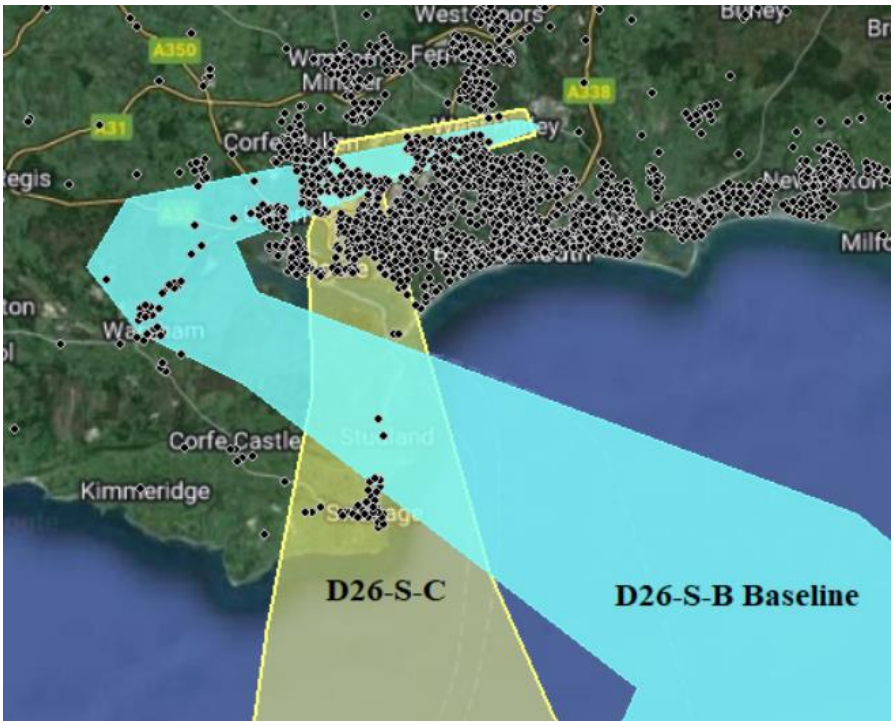
6.4.3.3. Option D26-S-B Baseline

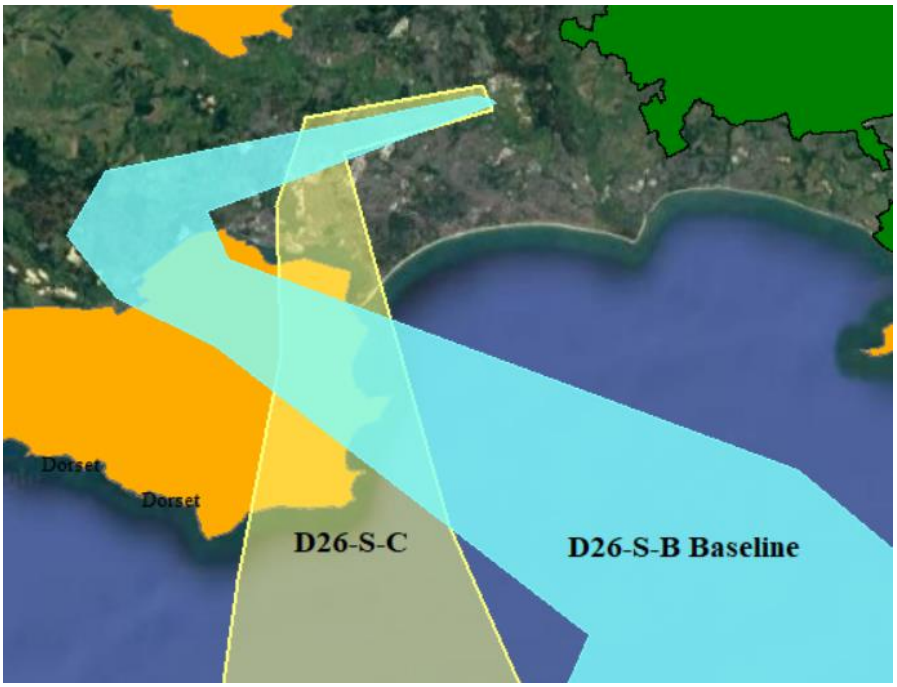
Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities after take-off with no change to noise impact.
	Air Quality	This option would continue to overfly the same communities after take-off with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the Dorset AONB will be overflown. There would be no change in impact on the AONB or tranquillity.
	Biodiversity	There are no additional biodiversity implications associated with retaining the baseline.
General aviation	Access	No change in CAS or access to it if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if this baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No commercial airline costs are anticipated should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP.

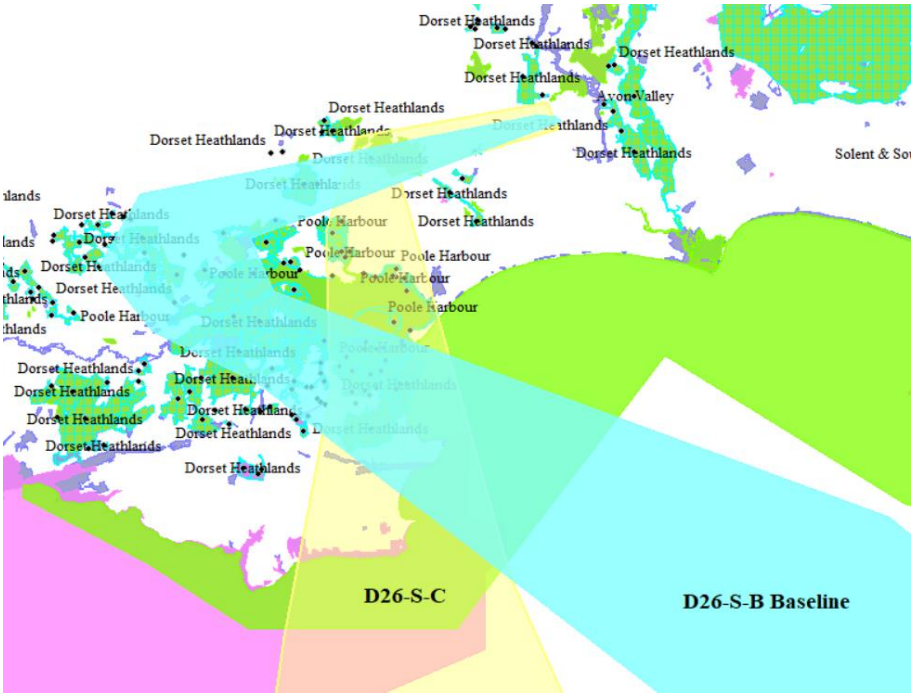
Group	Impact	Qualitative Assessment
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.
All	Safety	No safety concerns should this baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.
	Interdependencies, conflicts and trade offs	Option D26-S-B baseline shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR airways traffic departing Bournemouth is reliant on a release from Southampton and may be subject to certain restrictions.

Table 27: Option D26-S-B Baseline

6.4.3.4. Option D26-S-C

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option overflies more people that the baseline. Newly flown over areas would include Poole, Hamworthy and Upton. Image shows the baseline (turquoise) and the option (C) with PWC overlayed. 

Group	Impact	Qualitative Assessment
	Air Quality	This design option would overfly more communities than the baseline on departure, however no changes below 1000ft, and therefore no change in impact to local air quality. This option does overfly the AQMA on Bournemouth road (A35) in Lower Parkstone.
Wider society	Greenhouse gas impact	Potential for a reduction in track miles as the route is more direct, therefore potential benefits to greenhouse gas and CO_2 emissions are anticipated.
	Capacity/ resilience	This option presents limited opportunity for increased capacity or resilience is anticipated.
	Tranquillity	This option overflies approximately the same square miles and similar areas of the Dorset AONB as current operations, however, would not overfly the northeastern section of the AONB. Image shows the baseline (turquoise) and the option (yellow) with the AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	This option overflies similar sites to the baseline immediately after take-off, then slightly less and different sections of sensitive sites. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (turquoise) and option (yellow) flying over these sites. 
General aviation	Access	No increase or reduction in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	There are marginal reductions in track length anticipated. Potentially some small change in benefits and impacts to fuel burn.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.

Group	Impact	Qualitative Assessment
service provider	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	Departs over EG D031 Portland. Due to flexible levels of D031, aircraft may have extended patterns to the north and northwest outside CAS to ensure a stable approach, commercial aircraft are therefore routed outside CAS in an area of intense GA activity and therefore safety concern.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of safety or simplification, but may contribute to improving fuel efficiency, environmental sustainability objectives and reducing noise and is therefore partially aligned.
	Interdependencies, conflicts and trade offs	Option D26-S-C shares significant interdependencies with Southampton. Solent CTA sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth when both Solent and Bournemouth are operating radar. Solent arrival and departure traffic routing to and from the south will need coordinating on a tactical basis or via the established Silent Handover procedures. Possible conflict with the Military operating in D 031, operating in the vicinity of Poole HLS and over the sea to the south of Bournemouth.

Table 28: Option D26-S-C

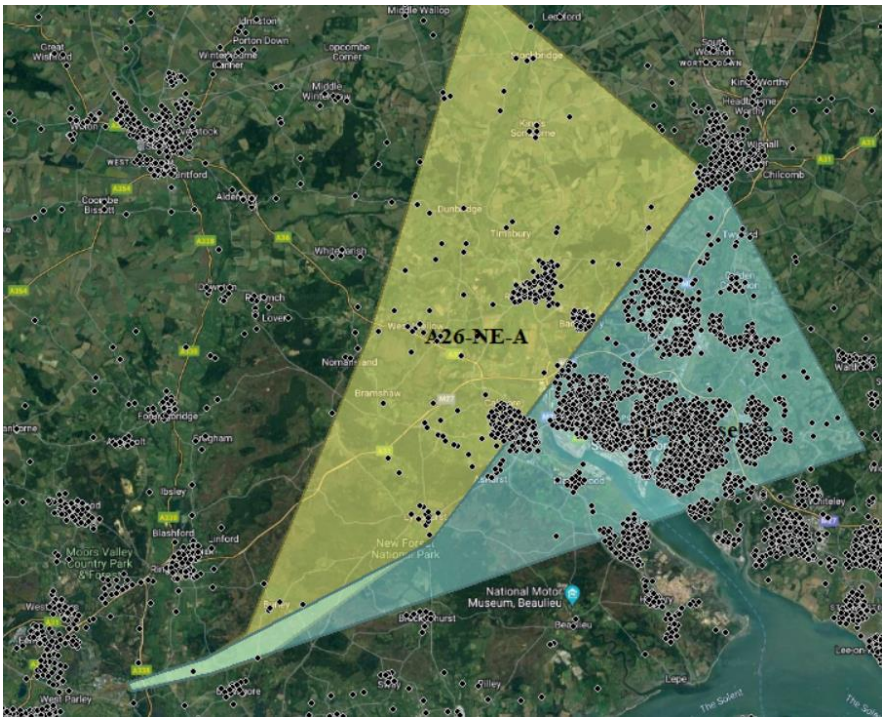
6.5. Runway 26 Arrivals

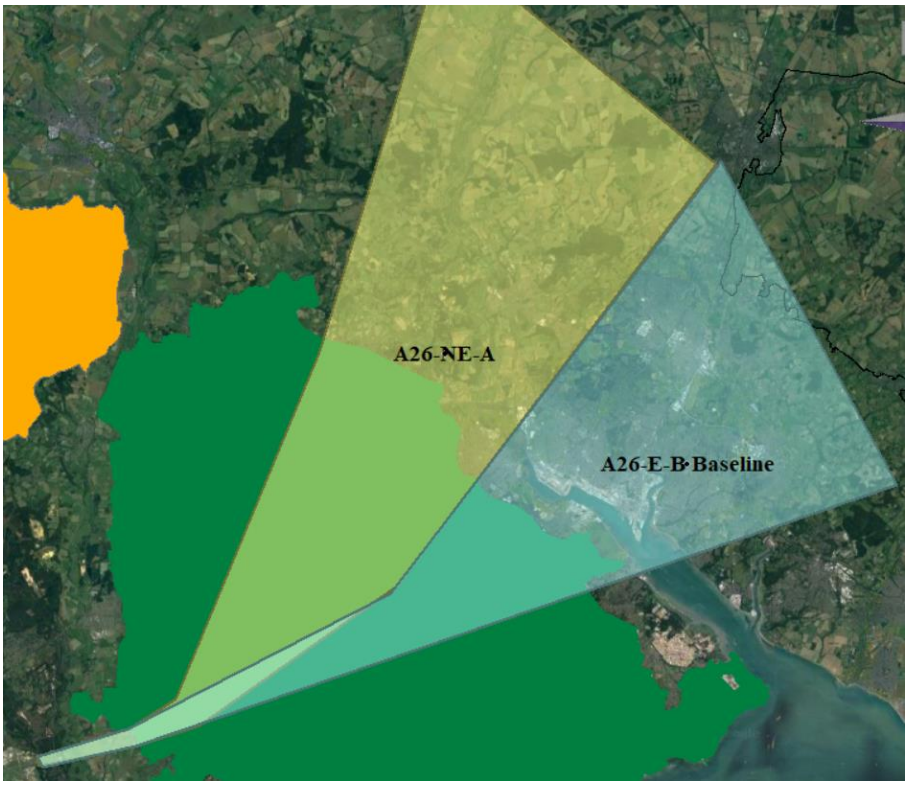
6.5.1. For RWY 26 there are three design envelopes for arrivals, Northeast, East Southeast and South.

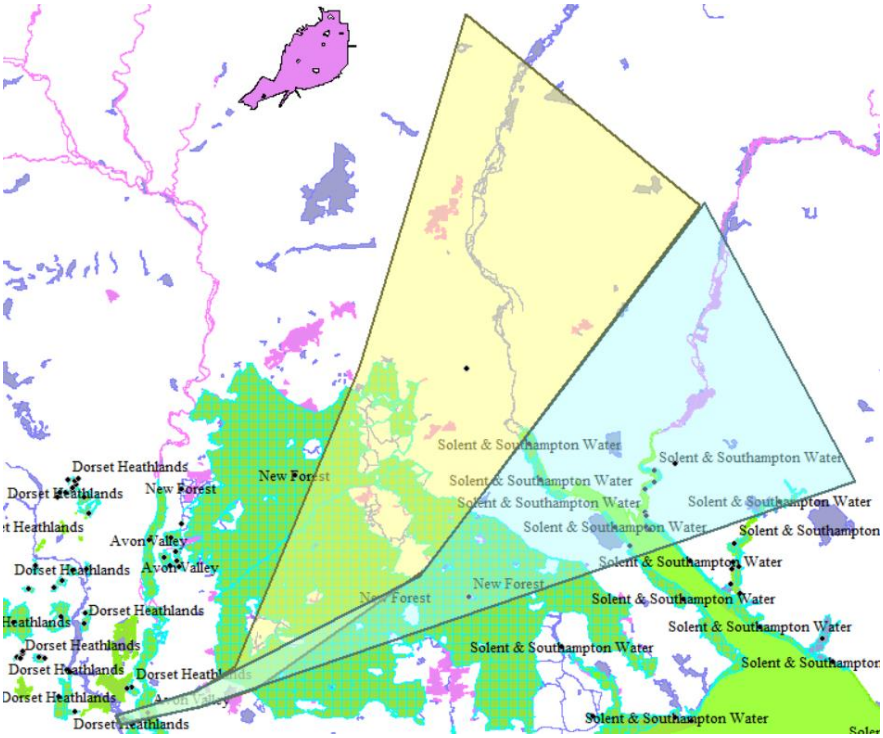
6.5.2. Northeast Design Envelope

6.5.2.1. In the Northeast Design Envelope for arrivals there are two options, A26-NE-A and A26-NE-B Baseline.

6.5.2.2. Option A26-NE-A

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option would initially arrive over the different communities and less densely populated areas compared to the baseline. Closer to arrival, and at a lower altitude, this option overflies similar communities to the baseline. The newly overflown areas would be of lower population density than the baseline. Newly overflown communities include Lyndhurst, Calmore and North Baddesley. Image shows the baseline (blue) and the option (yellow) with PWC overlayed. 
	Air Quality	This design option would overfly the same communities as the baseline close to landing with no change in impact to local air quality.

Group	Impact	Qualitative Assessment
Wider society	Greenhouse gas impact	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to greenhouse gas and CO_2 emissions are anticipated.
	Capacity/ resilience	This option takes aircraft out of CAS, FUA is in this area and would require reviewing and amending. Currently available 06:30-09:30 and 17:30-21:30 (winter) and 04;45- 08:30 and 16:30-20:30 (summer).
	Tranquillity	Similar amount of the New Forest National Park will be overflown, compared with the current operations, the northeast of the park would be newly overflown. There would therefore be a change in impact to the northeast of New Forest National Park in terms of tranquillity. Image shows option A (Yellow), option B baseline (blue) with the New Forest NP in green underneath the swathes. 

Group	Impact	Qualitative Assessment
	Biodiversity	Initially aircraft would be flying over similar amount but different sections of sensitive sites. Closer to arrival, and at a lower altitude, this option overflies similar sites to the baseline. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (blue) and option (yellow) flying over these sites. 
General aviation	Access	This option takes aircraft out of CAS therefore the GA community will be impacted. If FUA became available more often, this would restrict GA activity further in this area.
General aviation/ commercial airlines	Economic impact from increased effective capacity	This option is broadly similar to the baseline so limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to fuel burn are anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.

Group	Impact	Qualitative Assessment
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	This option takes aircraft out of CAS airspace. No safety concerns. Note: BOH already have FUA in that area it will need to be reviewed/amended for this option. Currently available 06:30-09:30 and 17:30-21:30 (Winter) and 04:45-08:30 and 16:30-20:30 9 summer).
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of simplification or improving fuel efficiency. It does however meet the safety and reducing noise objectives and is therefore partially aligned.
	Interdependencies, conflicts and trade offs	Option A26-NE-A shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR Traffic inbound from the NE would initially be controlled by Solent Radar and deconflicted with their traffic prior to transfer to Bournemouth either with coordination or by the established Silent Handover.

Table 29: Option A26-NE-A

6.5.2.3. Option A26-NE-B Baseline

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities after take-off with no change to noise impact.

Group	Impact	Qualitative Assessment
	Air Quality	This option would continue to overfly the same communities after take-off with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the New Forest National Park will be overflown. There would be no change in impact on New Forest National Park or tranquillity.
	Biodiversity	There are no additional biodiversity implications associated with retaining the baseline.
General aviation	Access	No change in CAS or access to it if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if this baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No commercial airline costs are anticipated should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP.

Group	Impact	Qualitative Assessment
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.
All	Safety	No safety concerns should this baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.
	Interdependencies, conflicts and trade offs	Option A26-NE-B- Baseline shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR Traffic inbound from the NE would initially be controlled by Solent Radar and deconflicted with their traffic prior to transfer to Bournemouth either with coordination or by the established Silent Handover.

Table 30: Option A26-NE-B Baseline

6.6.1. East Southeast Design Envelope

6.6.1.1. In the East-Southeast Design Envelope for arrivals there are three options, A26-ESE-A Baseline, A26-ESE-B and A26-ESE-C.

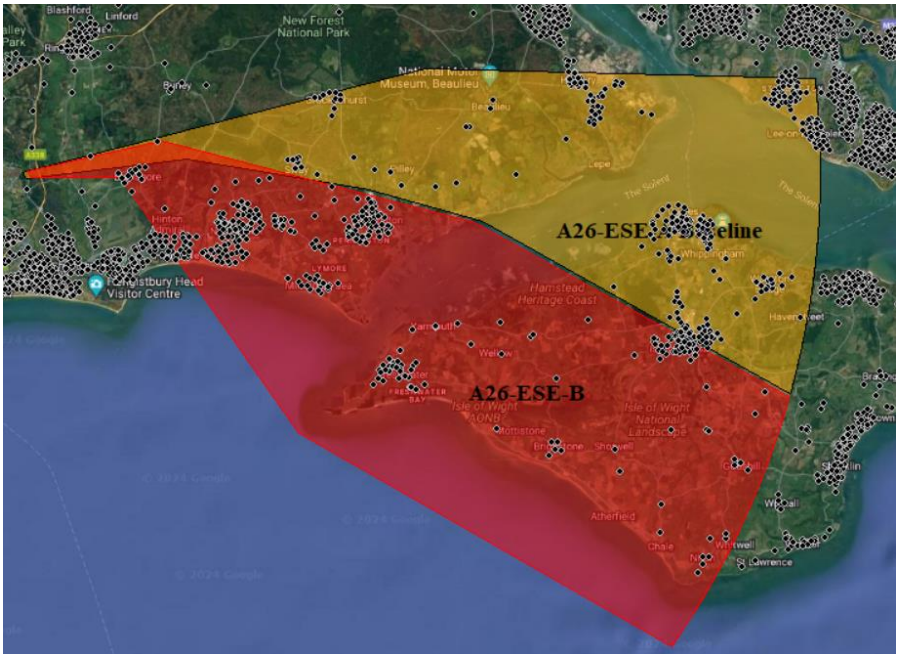
6.6.1.2. Option A26-ESE-A Baseline

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities after take-off with no change to noise impact.
	Air Quality	This option would continue to overfly the same communities after take-off with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the New Forest National Park will be overflown. There would be no change in impact on New Forest National Park or tranquillity.

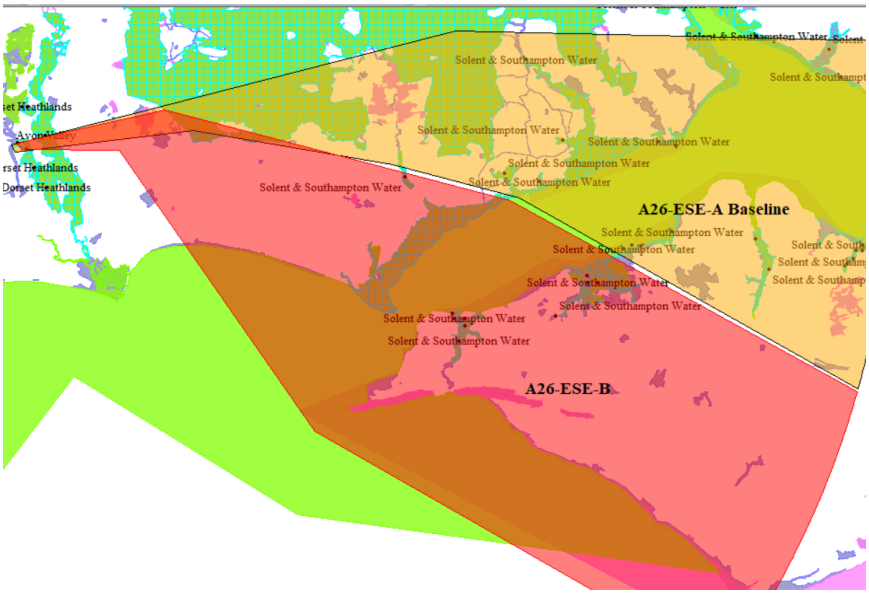
Group	Impact	Qualitative Assessment
	Biodiversity	There are no additional biodiversity implications associated with retaining the baseline.
General aviation	Access	No change in CAS or access to it if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if this baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No commercial airline costs are anticipated should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP.
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.
All	Safety	No safety concerns should this baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.
	Interdependencies, conflicts and trade offs	Option A26-ESE-A Baseline shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR Traffic inbound from the NE would initially be controlled by Solent Radar and deconflicted with their traffic prior to transfer to Bournemouth either with coordination or by the established Silent Handover.

Table 31: Option A26-ESE-A Baseline

6.6.1.3. Option A26-ESE-B

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This design option would initially arrive over the different communities and marginally less densely populated areas compared to the baseline. However it would overfly more communities than the baseline upon arrival. Newly overflown communities include New Milton, Hordle and Barton on Sea. Before this point, this design option would overfly the Isle of Wight towns of Norton Green and Freshwater although this will likely be above 4000ft. Image shows the baseline (orange) and the option (red) with PWC overlayed. 
	Air Quality	This design option would overfly the same communities as the baseline upon arrival with no change in impact to local air quality.
Wider society	Greenhouse gas impact	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to greenhouse gas and CO_2 emissions are anticipated.
	Capacity/ resilience	This option provides limited opportunity for increased capacity or resilience. Possible conflicts with Southampton arrivals and departures.

Group	Impact	Qualitative Assessment
	Tranquillity	This option overflies a small section of the New Forest National Park, however considerably less of the Park would be overflown compared to the baseline. The Isle of Wight would be overflown upon arrival. Image shows the baseline (orange) and the option (red) with the NP (green) and AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	Initially aircraft would be flying over similar amount but different sections of sensitive sites. Closer to arrival, and at a lower altitude, this option overflies similar sites to the baseline This option overflies the Solent and Southampton Water, the Highcliffe to Milford Cliffs, Yar Estuary and Boulder and Hamstead cliffs and Compton Chine to Steephill. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (orange) and option (red) flying over these sites. 
General aviation	Access	No increase or reduction in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated. Increase in track miles and therefore potential increase fuel costs.
	Fuel burn	Little to no difference in track miles between this option and the baseline. No significant benefits or impacts to fuel burn are anticipated.
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.

Group	Impact	Qualitative Assessment
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP. This option contributes to the VOR rationalisation programme, currently underway within the UK, as it removes reliance on ground based navigational aids with the implementation of PBN.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	Possible conflicts with Southampton with arrivals and departures. This design option would overfly the Portsmouth Danger Area. The south part of swathe intercepts the ILS at 6nm therefore the north part viable only as this increases the chances of an unstable approach.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of safety, simplification, improving fuel efficiency, or reducing noise and is therefore not aligned
	Interdependencies, conflicts and trade offs	Option A26-ESE-B shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR Traffic inbound from the NE would initially be controlled by Solent Radar and deconflicted with their traffic prior to transfer to Bournemouth either with coordination or by the established Silent Handover.

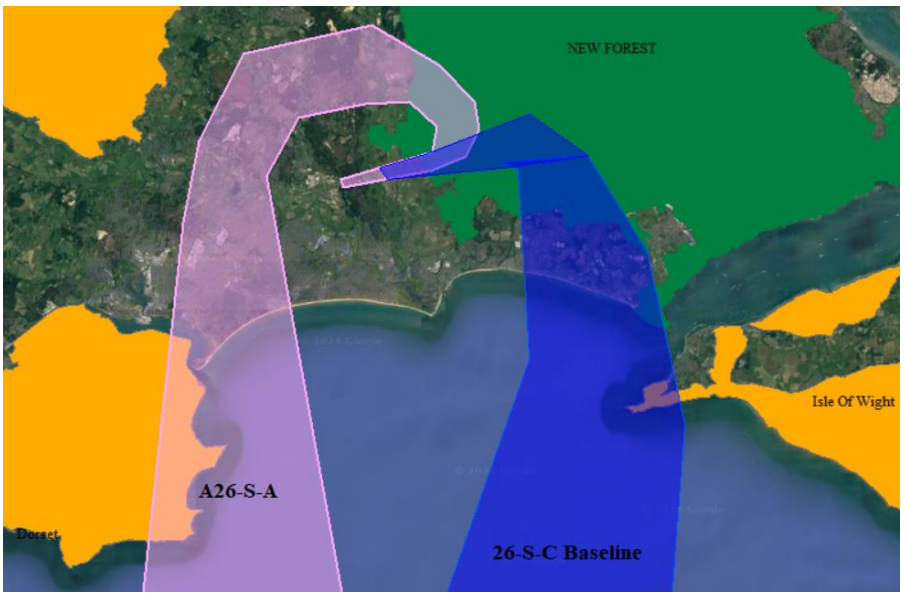
Table 32: Option A26-ESE-B

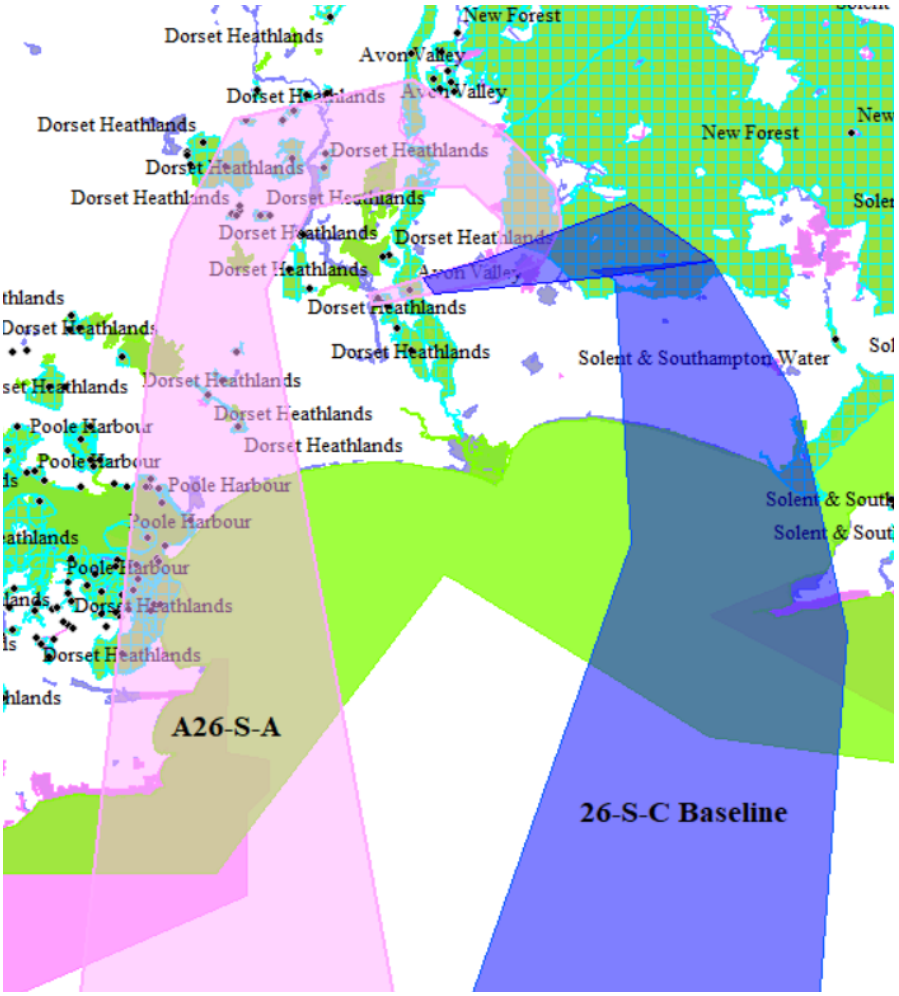
6.6.2. South Design Envelope

6.6.2.1. In the South Design Envelope for arrivals there are two options, A26-S-A and A26-S-C Baseline.

6.6.2.2. Option A26-S-A

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	As this design option is a wraparound turning right upon arrival it overflies significantly more people than the baseline. Newly overflown communities include Ringwood, Ashley Heath, St Ives and St Leonards. Image shows the baseline (purple) and the option (pink) with the NP (green) and AONB (orange) underneath. 
	Air Quality	This design option would overfly different communities than current operations on arrival, below 1000ft, however no change in impact to local air quality. This option does overfly AQMAs in Upper and Lower Parkstone.
Wider society	Greenhouse gas impact	As this design option is a wraparound there will be significantly more track miles between this option and the baseline and therefore greater impact on greenhouse gas and CO_2 emissions.

Group	Impact	Qualitative Assessment
	Capacity/ resilience	Reduced capacity and resilience is anticipated.
	Tranquillity	This option overflies less of the New Forest National Park than the baseline however will overfly a small portion of the Dorset AONB at the easterly tip. Image shows the baseline (purple) and the option (pink) with the NP (green) and AONB (orange) underneath. 

Group	Impact	Qualitative Assessment
	Biodiversity	This option overflies more and different sensitive sites than the baseline. These are Ramsar sites (turquoise hatched), SPAs (green), SACs (pink) and SSSIs (purple). Image shows baseline (purple) and option (pink) flying over these sites. 
General aviation	Access	Increase in CAS is anticipated for this option.
General aviation/ commercial airlines	Economic impact from increased effective capacity	Limited opportunity for increased effective capacity or benefit to economic impact is anticipated.
	Fuel burn	There are significant changes in track length and therefore a greater impact on fuel burn is anticipated.

Group	Impact	Qualitative Assessment
Commercial airlines	Training costs	No additional training costs for airlines are anticipated with this option. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No other commercial airline costs are anticipated with the initial deployment of this option.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	Operational costs are anticipated with the initial deployment of this option for the Airport. This option would require increase in CAS, radar displays, retraining of staff and therefore considerable costs anticipated.
	Deployment costs	It is anticipated that controller and assistant training will be required for the initial deployment of this option. The scope and scale of this training requirement will be assessed further during the Stage 3 Full Options Appraisal.
All	Safety	Arrives over Lulworth Danger Area (EG DO26) and Portland Danger Area (EG D031) which would cause a significant safety concern.
	AMS Realisation	This option contributes to the VOR rationalisation currently ongoing within the UK as it removes reliance on ground based navigational aids with the implementation of PBN. It does not contribute to the AMS objectives of safety, simplification, improving fuel efficiency, environmental sustainability objectives or reducing noise and is therefore not aligned.
	Interdependencies, conflicts and trade offs	Option A26-S-A shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR Traffic inbound from the NE would initially be controlled by Solent Radar and deconflicted with their traffic prior to transfer to Bournemouth either with coordination or by the established Silent Handover. There is a conflict with departure routes of RWY 26 crossing over the climbout and may conflict with any traffic holding at the BIA.

Table 33: Option A26-S-A

6.6.2.3. Option A26-S-C Baseline

Group	Impact	Qualitative Assessment
Communities	Noise impact on health and quality of life	This option would continue to overfly the same communities after take-off with no change to noise impact.
	Air Quality	This option would continue to overfly the same communities after take-off with no change in impact to local air quality.
Wider society	Greenhouse gas impact	There would be no change in track length or altitudes. No change in benefits or impacts to greenhouse gas and CO_2 emissions.
	Capacity/ resilience	No opportunity to increase capacity or resilience.
	Tranquillity	The same areas of the New Forest National Park will be overflown. There would be no change in impact on New Forest National Park or tranquillity.
General aviation	Access	No change in CAS or access to it if the baseline was to be retained.
General aviation/ commercial airlines	Economic impact from increased effective capacity	No opportunity for increased capacity or benefit to economic impact should the baseline option be retained.
	Fuel burn	There would be no change in track length or altitudes. No change in benefits or impacts to fuel burn.
Commercial airlines	Training costs	No training costs for airlines as there would be no new procedures if this baseline option were to be retained. Updates to flight procedures form part of an AIRAC cycle where airlines will update their procedures and utilise training if deemed necessary as standard.
	Other costs	No commercial airline costs are anticipated should the baseline be retained.
Airport/ Air navigation service provider	Infrastructure costs	No infrastructure costs are anticipated with the initial deployment of this option for either the Airport or ANSP.
	Operational costs	No operational costs are anticipated with the initial deployment of this option for either the Airport or the ANSP.

Group	Impact	Qualitative Assessment
	Deployment costs	No controller or assistant training will be required should the baseline be retained as procedures will not be changed.
All	Safety	No safety concerns should this baseline option be retained.
	AMS Realisation	No change and therefore no improvements to align with AMS objectives.
	Interdependencies, conflicts and trade offs	Option A26-S-C Baseline shares significant interdependencies with Southampton. Solent CTA 2 borders to the east and sits above Bournemouth from 2000-5500ft with the airspace delegated to Bournemouth under certain conditions. IFR Traffic inbound from the NE would initially be controlled by Solent Radar and deconflicted with their traffic prior to transfer to Bournemouth either with coordination or by the established Silent Handover.

Table 34: Option A26-S-C Baseline

7. IOA results

7.1. This section details the results of the IOA. The RAG score key can be found in Table 6 in Section 2.3.2. The tables are by design envelope with each option compared against the assessment criteria.

7.2. Runway 08 Departures

7.2.1. Northeast

Group	Impact	D08-NE-A	D08-NE-B Baseline
Communities	Noise impact on health and quality of life		
	Air Quality		
Wider society	Greenhouse gas impact		
	Capacity/ resilience		
	Tranquillity		
	Biodiversity		
General aviation	Access		
General aviation/ commercial airlines	Economic impact from increased effective capacity		
	Fuel burn		
Commercial airlines	Training costs		
	Other costs		
Airport/ Air navigation service provider	Infrastructure costs		
	Operational costs		
	Deployment costs		

Group	Impact	D08-NE-A	D08-NE-B Baseline
All	Safety		
	AMS Realisation		
	Interdependencies, conflicts and trade-offs		

Table 35: D08 Northeast IOA Results

7.2.2. East

Group	Impact	D08-E-C Baseline	D08-E-D
Communities	Noise impact on health and quality of life		
	Air Quality		
Wider society	Greenhouse gas impact		
	Capacity/ resilience		
	Tranquillity		
	Biodiversity		
General aviation	Access		
General aviation/ commercial airlines	Economic impact from increased effective capacity		
	Fuel burn		
Commercial airlines	Training costs		

Group	Impact	D08-E-C Baseline	D08-E-D
	Other costs		
Airport/ Air navigation service provider	Infrastructure costs		
	Operational costs		
	Deployment costs		
All	Safety		
	AMS Realisation		
	Interdependencies, conflicts and trade-offs		

Table 36: D08 East IOA Results

7.2.3. South

Group	A08-NE-A Impact	D08-S-A	D08-S-B Baseline
Communities	Noise impact on health and quality of life		
	Air Quality		
Wider society	Greenhouse gas impact		
	Capacity/ resilience		
	Tranquillity		
	Biodiversity		
General aviation	Access		

Group	A08-NE-A Impact	D08-S-A	D08-S-B Baseline
General aviation/ commercial airlines	Economic impact from increased effective capacity		
	Fuel burn		
Commercial airlines	Training costs		
	Other costs		
Airport/ Air navigation service provider	Infrastructure costs		
	Operational costs		
	Deployment costs		
All	Safety		
	AMS Realisation		
	Interdependencies, conflicts and trade-offs		

Table 37: D08 South IOA Results

7.3. Runway 08 Arrivals

7.3.1. Northeast

Group	Impact	A08-NE-A	A08-NE-B Baseline	A08-NE-C
Communities	Noise impact on health and quality of life			
	Air Quality			

Group	Impact	A08-NE-A	A08-NE-B Baseline	A08-NE-C
Wider society	Greenhouse gas impact			
	Capacity/ resilience			
	Tranquillity			
	Biodiversity			
General aviation	Access			
General aviation/ commercial airlines	Economic impact from increased effective capacity			
	Fuel burn			
Commercial airlines	Training costs			
	Other costs			
Airport/ Air navigation service provider	Infrastructure costs			
	Operational costs			
	Deployment costs			
All	Safety			
	AMS Realisation			
	Interdependencies, conflicts and trade-offs			

Table 38: A08 Northeast IOA Results

7.3.2. Southeast

Group	Impact	A08-SE-B	A08-SE-A Baseline
Communities	Noise impact on health and quality of life		
	Air Quality		
Wider society	Greenhouse gas impact		
	Capacity/ resilience		
	Tranquillity		
	Biodiversity		
General aviation	Access		
General aviation/ commercial airlines	Economic impact from increased effective capacity		
	Fuel burn		
Commercial airlines	Training costs		
	Other costs		
Airport/ Air navigation service provider	Infrastructure costs		
	Operational costs		
	Deployment costs		
All	Safety		
	AMS Realisation		
	Interdependencies, conflicts and trade-offs		

Table 39: A08 Southeast IOA Results

7.3.3. South

Group	Impact	A08-S-A	A08-S-B Baseline	A08-S-C
Communities	Noise impact on health and quality of life			
	Air Quality			
Wider society	Greenhouse gas impact			
	Capacity/ resilience			
	Tranquillity			
	Biodiversity			
General aviation	Access			
General aviation/ commercial airlines	Economic impact from increased effective capacity			
	Fuel burn			
Commercial airlines	Training costs			
	Other costs			
Airport/ Air navigation service provider	Infrastructure costs			
	Operational costs			
	Deployment costs			
All	Safety			
	AMS Realisation			
	Interdependencies, conflicts and trade-offs			

Table 40: A08 South IOA Results

7.4. Runway 26 Departures

7.4.1. East

Group	Impact	D26-E-A	D26-E-C Baseline	D26-E-D	D26-E-E
Communities	Noise impact on health and quality of life				
	Air Quality				
Wider society	Greenhouse gas impact				
	Capacity/ resilience				
	Tranquillity				
	Biodiversity				
General aviation	Access				
General aviation/ commercial airlines	Economic impact from increased effective capacity				
	Fuel burn				
Commercial airlines	Training costs				
	Other costs				
Airport/ Air navigation service provider	Infrastructure costs				
	Operational costs				
	Deployment costs				
All	Safety				
	AMS Realisation				
	Interdependencies, conflicts and trade-offs				

Table 41: D26 East IOA Results

7.4.2. South

Group	Impact	D26-S-A	D26-S-B Baseline	D26-S-C
Communities	Noise impact on health and quality of life			
	Air Quality			
Wider society	Greenhouse gas impact			
	Capacity/ resilience			
	Tranquillity			
	Biodiversity			
General aviation	Access			
General aviation/ commercial airlines	Economic impact from increased effective capacity			
	Fuel burn			
Commercial airlines	Training costs			
	Other costs			
Airport/ Air navigation service provider	Infrastructure costs			
	Operational costs			
	Deployment costs			
All	Safety			
	AMS Realisation			
	Interdependencies, conflicts and trade-offs			

Table 42: D26 South IOA Results

7.5. Runway 26 Arrivals

7.5.1. Northeast

Group	Impact	A26-NE-A	A26-NE-B Baseline
Communities	Noise impact on health and quality of life		
	Air Quality		
Wider society	Greenhouse gas impact		
	Capacity/ resilience		
	Tranquillity		
	Biodiversity		
General aviation	Access		
General aviation/ commercial airlines	Economic impact from increased effective capacity		
	Fuel burn		
Commercial airlines	Training costs		
	Other costs		
Airport/ Air navigation service provider	Infrastructure costs		
	Operational costs		
	Deployment costs		
All	Safety		
	AMS Realisation		

Group	Impact	A26-NE-A	A26-NE-B Baseline
	Interdependencies, conflicts and trade-offs		

Table 43: A26 Northeast IOA Results

7.5.2. East Southeast

Group	Impact	A26-ESE-A Baseline	A26-ESE-B
Communities	Noise impact on health and quality of life		
	Air Quality		
Wider society	Greenhouse gas impact		
	Capacity/ resilience		
	Tranquillity		
	Biodiversity		
General aviation	Access		
General aviation/ commercial airlines	Economic impact from increased effective capacity		
	Fuel burn		
Commercial airlines	Training costs		
	Other costs		
	Infrastructure costs		

Group	Impact	A26-ESE-A Baseline	A26-ESE-B
Airport/ Air navigation service provider	Operational costs		
	Deployment costs		
All	Safety		
	AMS Realisation		
	Interdependencies, conflicts and trade-offs		

Table 44: A26 Southeast IOA Results

7.5.3. South

Group	Impact	A26-S-A	A26-S-C Baseline
Communities	Noise impact on health and quality of life		
	Air Quality		
Wider society	Greenhouse gas impact		
	Capacity/ resilience		
	Tranquillity		
	Biodiversity		
General aviation	Access		

Group	Impact	A26-S-A	A26-S-C Baseline
General aviation/ commercial airlines	Economic impact from increased effective capacity		
	Fuel burn		
Commercial airlines	Training costs		
	Other costs		
Airport/ Air navigation service provider	Infrastructure costs		
	Operational costs		
	Deployment costs		
All	Safety		
	AMS Realisation		
	Interdependencies, conflicts and trade-offs		

Table 45: A26 South IOA Results

8. Next Steps

8.1.1. Due to the Methodology applied in this IOA, we have not yet conducted any detailed quantitative assessments to make a decision on preferred options at this stage. These will be carried out at Stage 3 during the Full Options Appraisal. These quantitative assessments will include but are not limited to:

- Noise modelling analysis in accordance with Category D standards as defined in CAP2091
- WebTAG Assessments;
- Overflight assessments;
- Precise track miles calculations detailing fuel burn and CO_2 emission data using the Base of Aircraft Data (BADA) model;
- Detailed Controlled Airspace (CAS) requirement assessments;
- More detailed analysis of interdependencies with other airports and the en-route network;
- Monetarised commercial airline costs;
- Monetarised airport costs;
- HRA.

8.1.2. There will be many interdependencies between various stakeholders involved in FASI(S) programme, compromises and trade-offs may be necessary, these will be guided by ACOG.

A. Annex A: Planned Developments

Local Authority	Local Plan/Core Strategy/Date & Source	Location/Development Name	Development Details	Status
Bournemouth Christchurch & Poole Council	Bournemouth (2012) @ https://www.bcpcouncil.gov.uk/Planning-and-building-control/Planning-policy/Current-Local-Plans/Bournemouth/Docs/Core-Strategy-1.pdf	None provided	Housing need of 14600 dwellings between 2006-2026 + 6438 new homes in existing urban area.	No further details given
	Christchurch (2014) @ https://www.bcpcouncil.gov.uk/Planning-and-building-control/Planning-policy/Current-Local-Plans/Christchurch/docs/christchurch-and-east-dorset-adopted-core-strategy.pdf	None provided	Potential for 319 new dwellings in the Town Centre ward area by 2027.	No further details given
		Turlin Moor	400 homes, local shopping, community centre	Allocated
			300 homes	
	Poole (2018) @ https://www.bcpcouncil.gov.uk/Planning-and-building-control/Planning-policy/Current-Local-Plans/Poole/Docs/Final-version-28.11.18.pdf-for-web.pdf	West of Bearwood	330 homes	Allocated
		Civic Centre	45 homes, school	Allocated
		Land off Roberts Ln	100 homes and/or care home	Allocated
		Sopers Ln	60 homes	Allocated
			60 homes, community facilities	
		Beach Rd Car Park	55 homes (minimum)	Allocated
		Oakdale public buildings	50 homes, retail	Allocated
		Former College site	50 homes	Allocated
		Creekmoor Local Centre	40 homes	Allocated
			40 homes	
		St Mary's Maternity Hospital		Allocated
		Old Wareham Rd		Allocated
		Hillbourne		Allocated
Dorset Council	West Dorset, Weymouth & Portland Local Plan (2015) @ https://www.dorsetcouncil.gov.uk/documents/35024/327480/West+Dorset%2C+Weymouth+%26+Portland+Local+Plan+2015.pdf/e6f329e7-ec5b-52fc-7364-4a8726877184	Land @ Markham & Little Francis	320 homes, school expansion	Allocated
		Land @ Louviers Rd	100 homes	Allocated
		Land @ Wey Valley	320 homes	Allocated
		Land @ The Old Rectory	39 homes	Allocated
		Former hardy Complex	384 homes	Allocated

	North Dorset Local Plan Part 1 (2016) @ https://www.dorsetcouncil.gov.uk/documents/35024/288359/North-Dorset-Local-Plan-Part-1-Policy-1-to-21.pdf/fbfc8a47-1bf8-64d2-94f9-a3e4cd2ec450 Swanage Local Plan (2017) @ https://www.dorsetcouncil.gov.uk/documents/35024/281432/ Adopted+Swanage+Local+Plan.pdf/03066a91-1cba-5650-e977-d3496777041e	Chickerell Urban extension Land @ Red Cow Farm Land S of St George's Rd Land off Allington Ave Land @ Crossways Vearse Farm Urban Extension Land N of Broadwindsor Rd Land @ Woodberry Down Barton Farm Urban Extension Blandford Gillingham Shaftesbury Sturminster Newton Countryside (inc Stalbridge & the Villages) Northbrook Road East Northbrook Road West Land @ Prospect Farm	820 homes, primary school, local retail Unspecified no. of homes Unspecified no. of homes Unspecified no. of homes Unspecified no. of homes 760 homes, school, community facilities 120 homes 90 homes 230 homes 1200 homes 2200 homes 1140 homes 395 homes 825 homes 90 homes 90 homes 20 homes	Allocated Allocated Allocated Allocated Allocated Allocated Allocated Allocated Allocated Proposed allocation Proposed allocation Proposed allocation Proposed allocation Proposed allocation Allocated Allocated Allocated
East Dorset District Council	East Dorset Local Plan (2002) @ https://www.dorsetcouncil.gov.uk/planning-buildings-land/planning-policy/adopted-local-plans/east-dorset-and-christchurch-adopted-local-plan	Victoria Rd/Old Rd Canford Bridge Brook Rd Green Worlds	15 homes 25 homes 60 homes 60 homes	No further details given No further details given No further details given Proposed for housing

New Forest District Council	Local Plan (2014) @ https://newforest.gov.uk/article/1463/Local-Plan-Part-2-Sites-and-Development-Management	Land @ Durley Farm, Hounsdown	Could accommodate 80 dwellings	Allocated for development
		Land @ Loperwood Farm	20 homes	Allocated for development
		Land @ Hanger Farm	330 homes	Allocated for development
		Land off Oleander Dr	No details provided	Allocated for development
		Land N of Michigan Way	No details provided	Allocated for development
		Land E of Brokenford Lane	48 homes	Allocated for development
		Stocklands, Calmore Dr	No details provided	Allocated for development
		Bus Depot, Salisbury Rd	No details provided	Allocated for development
		Land between Cracknore Hard Ln & Normandy Way	Could accommodate 12 dwellings	Allocated for development
		Land @ Park's Farm	100 homes, play space, allotments	Allocated for development
		Land S of Hythe Rd	15 homes, play space	Allocated for development
		Land off Mulberry Rd	12-15 homes	Allocated for development
		Land @ Forest Lodge Farm	40-45 homes	Allocated for development
		Land off Cabot Dr, Dibden	No details provided	Allocated for development
		Land adjacent to Blackfield Primary School	30 homes	Allocated for development
		Pinetops Nursery	45 homes	Allocated for development
		Land N of Alexandra Rd	80 homes, play space, allotments	Allocated for development
		Land @ Queen Katherine Rd	15 homes, play space	Allocated for development
		Land S of Ampress Ln	10 homes	Allocated for development
		Fox Pond Dairy Depot & Garage	14 homes	Allocated for development
			No details provided	Allocated for development
			30 homes, play space	Allocated for development
			15 homes, play space, allotments	Allocated for development
			20 homes	Allocated for development
			15 homes, play space	Allocated for development
			20 homes, play space, allotments	Allocated for development

		Riverside Site, Bridge Rd	54 homes, retention of woodland & pond	Allocated for development
		Land N of School Ln	90 homes	Allocated for development
		Land @ Hordle Lane Nursery	15 homes	Allocated for development
		Land S of Gore Rd, E of the Old Barn	150 homes, play space, allotments	Allocated for development
		Land W of Moore Cl		Allocated for development
		Land off Park Rd, Ashley	100 homes, allotments	
		Land E of Caird Ave, S of Carrick Way	10 homes	Allocated for development
		Land E of Caird Ave, S of Carrick Way Woodland		Allocated for development
		Land E of Fernhill Ln		Allocated for development
		Land S of Ringwood, W of Crow Ln & adjacent to Crow Arch Ln.		Allocated for development
		Land E of Whitsbury Rd, Fordingbridge		Allocated for development
		Land adjoining Jubilee Cres, Ashford		

Table 46: Planned Deveopments

B. Annex B: Tranquillity Map

B.1. The following map illustrates the Areas of Outstanding Natural Beauty (AONB) and National Parks (NP) within a 25 nm range of the airport.

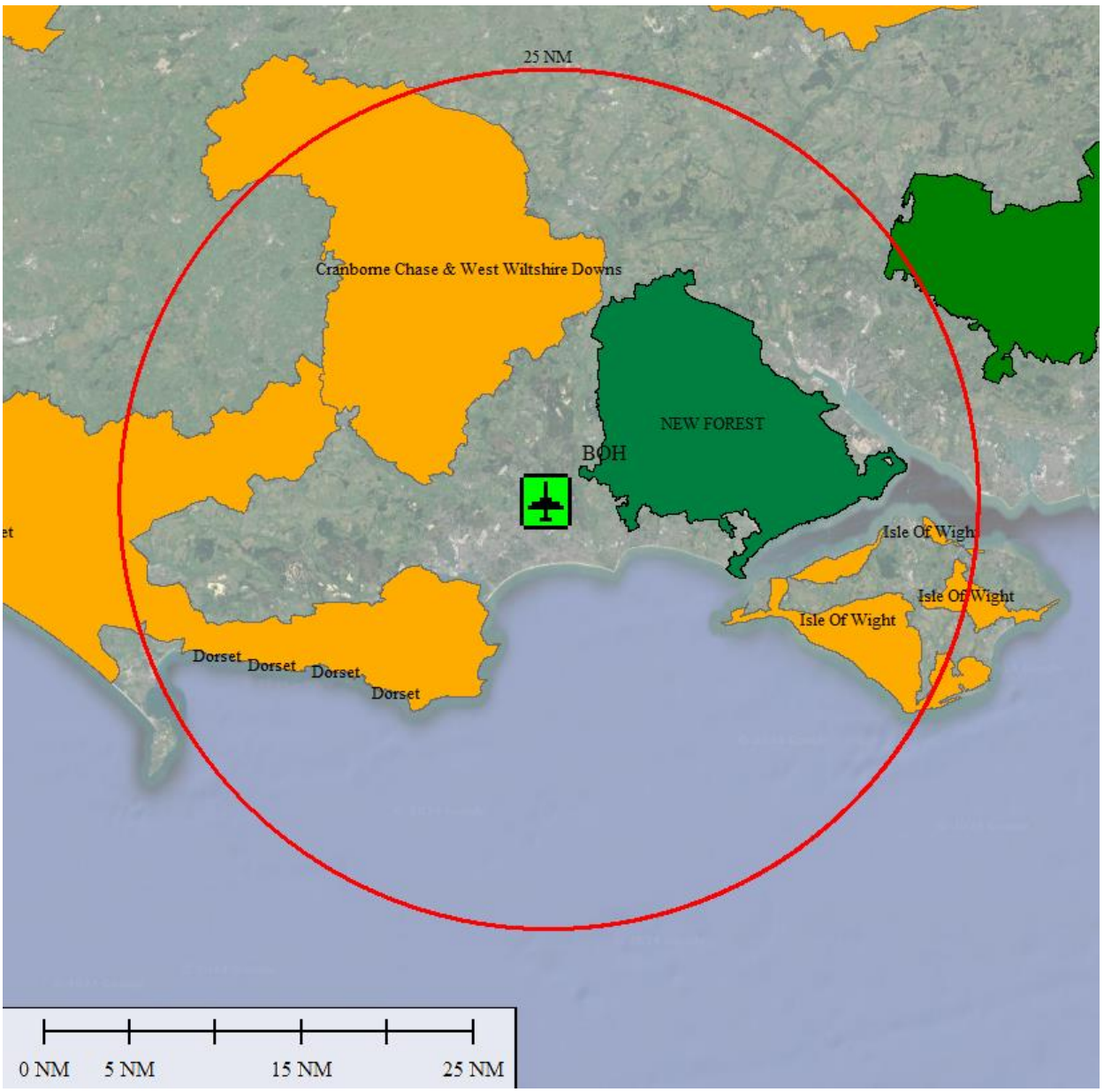


Figure 27: Tranquillity Map

C. Annex C: European Sites

C.1. Ramsar Sites

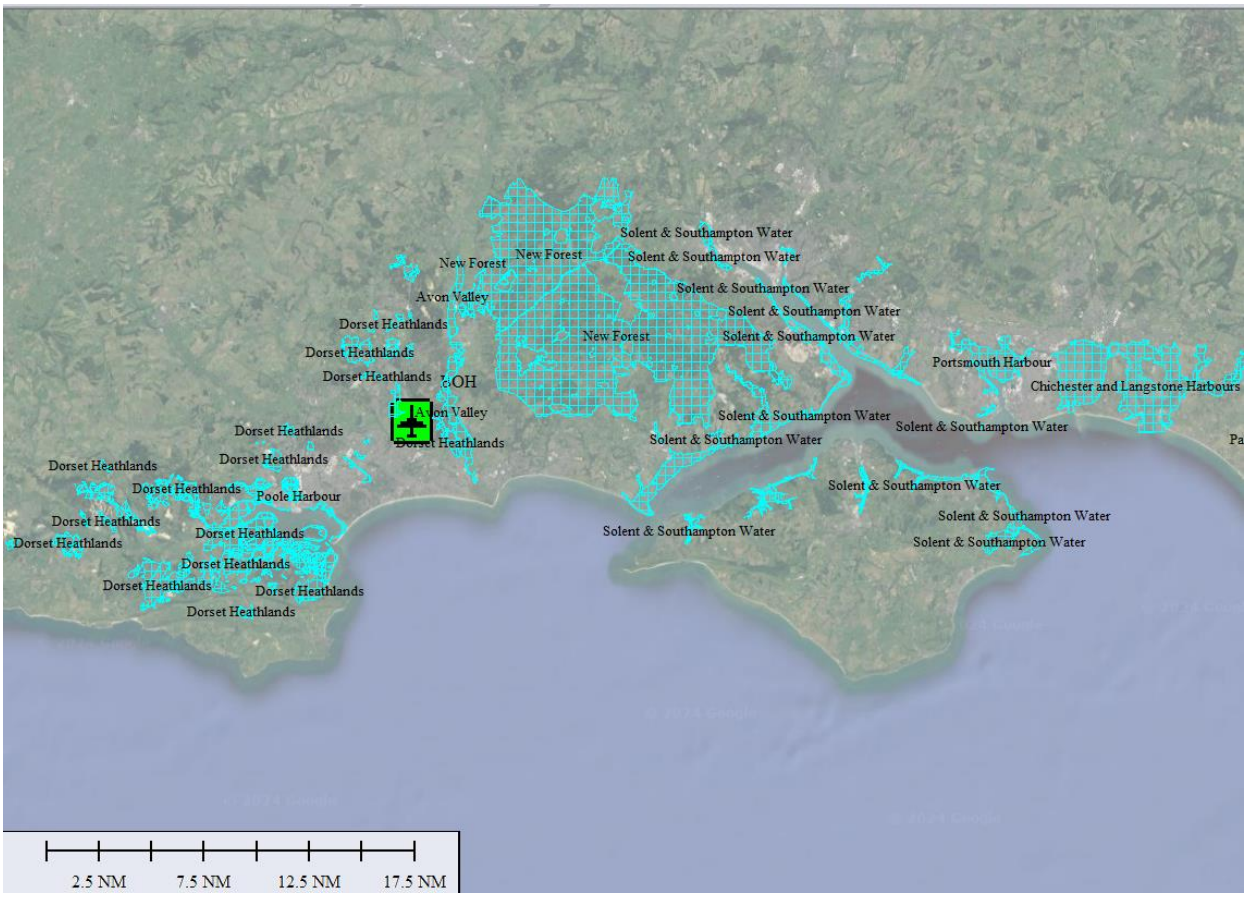


Figure 28: Ramsar Sites

C.2. Sites of Special Scientific Interest

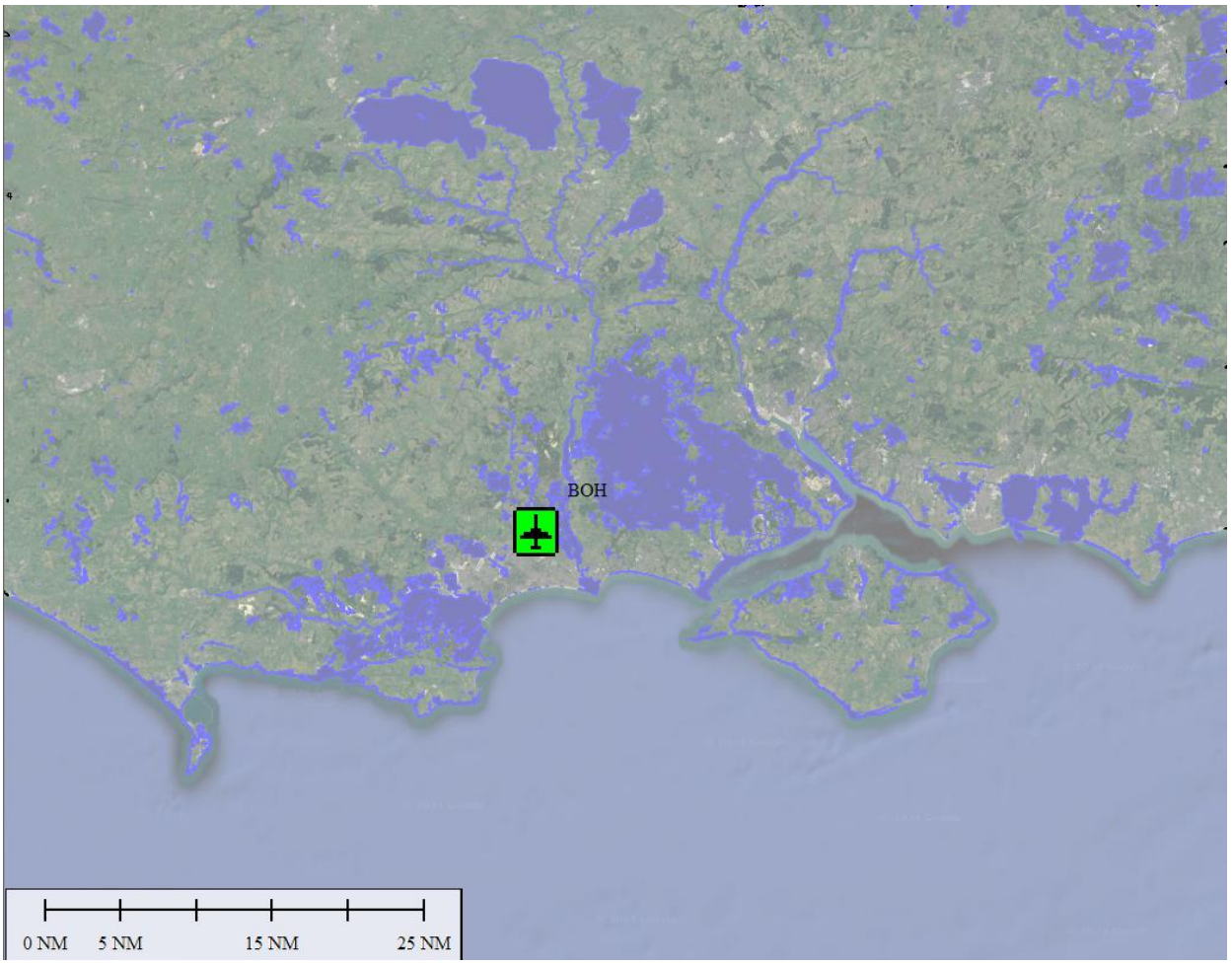


Figure 29: Sites of Special Scientific Interest

C.3. Special Areas of Conservation

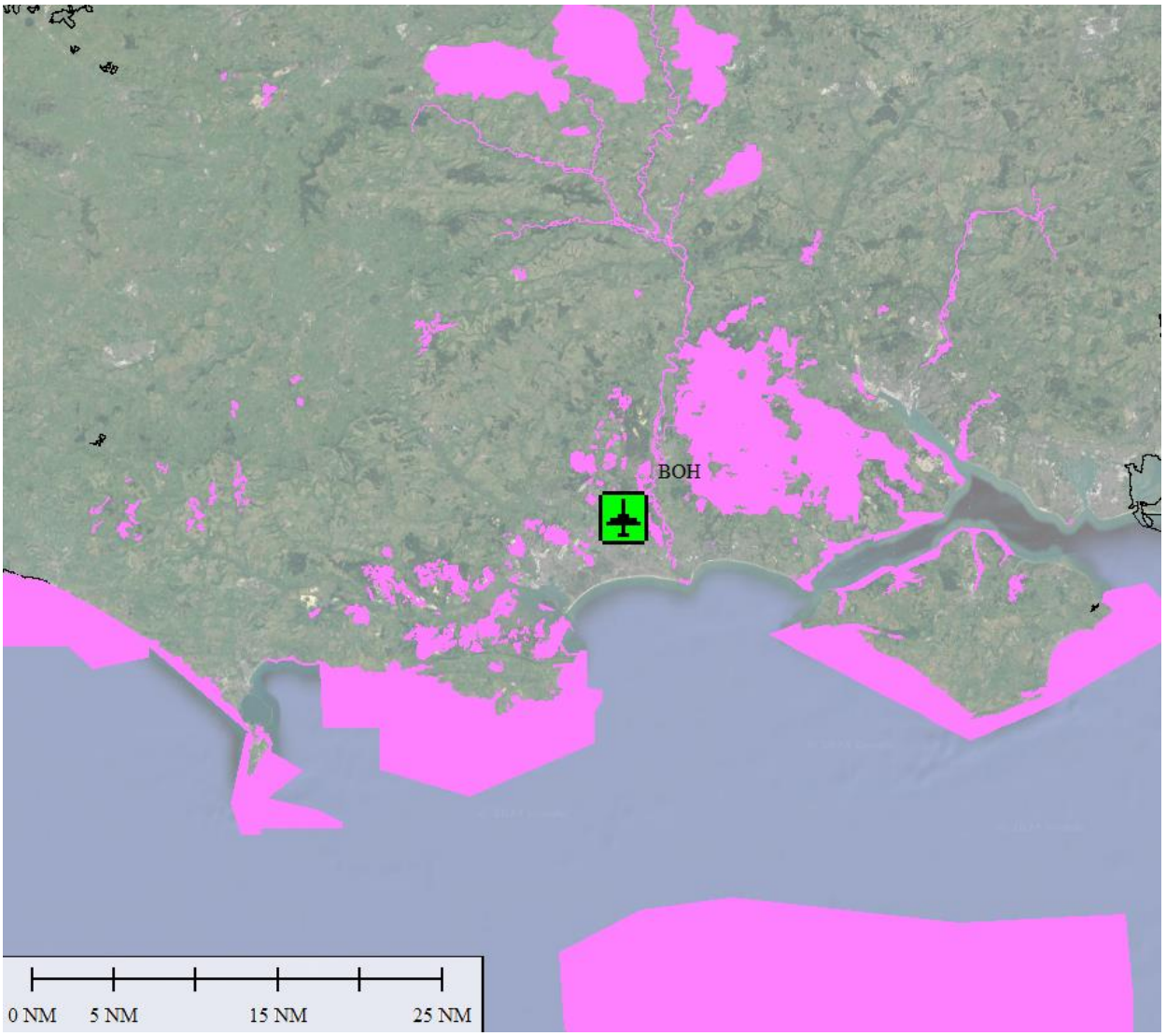


Figure 30: Special Areas of Conservation

C.4. Special Protection Areas

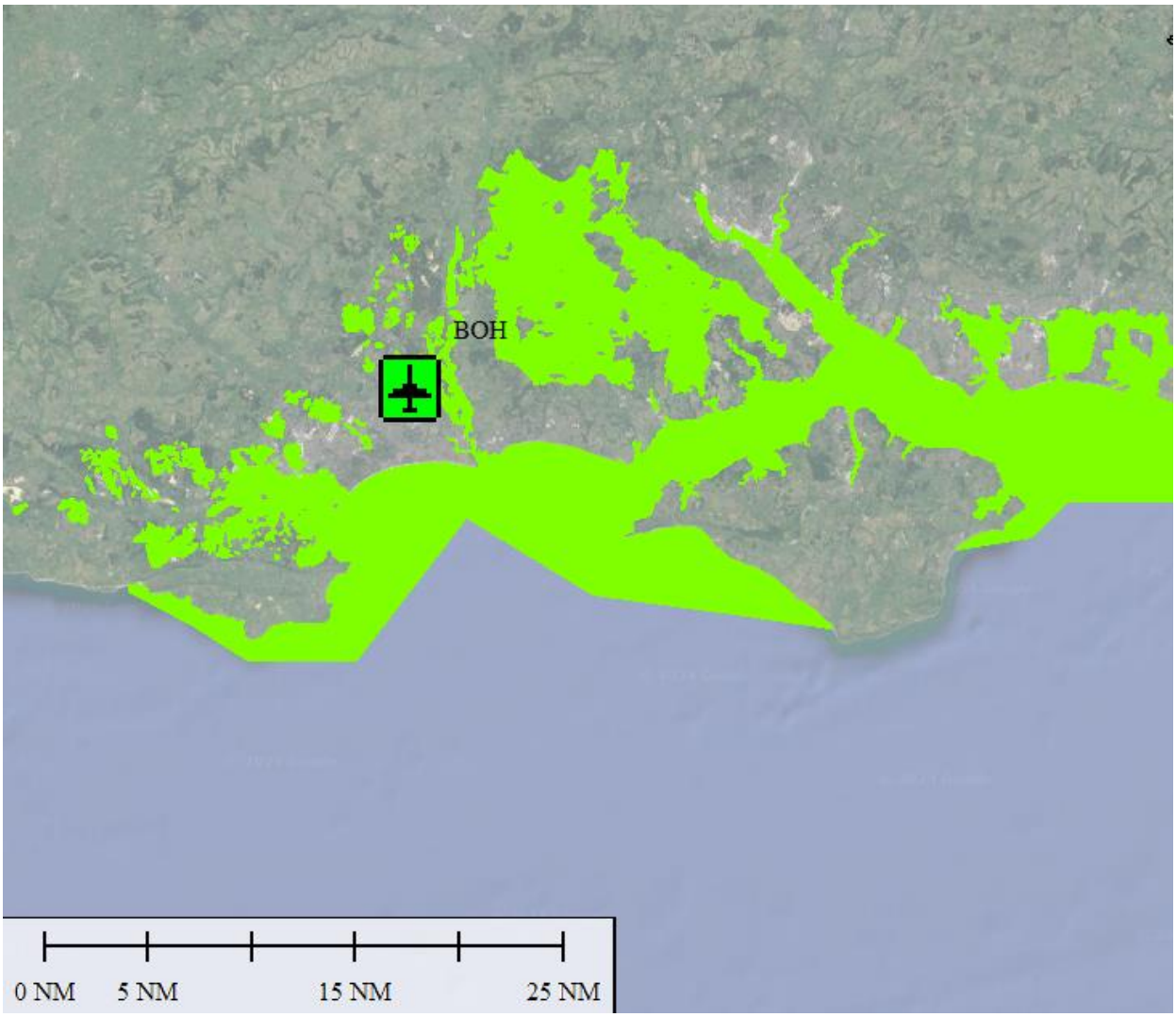


Figure 31: Special Protection Areas

D. Annex D: Population Density and Air Quality Maps

D.1. The maps show data from the Office for National Statistics (ONS) Open Geography portal [15]. Each dot represents the location of the Population Weighted Centroid (PWC) of an administrative unit. This is the traditional and most widely understood method for calculating an aggregate measure of human population density within any geographical region. A PWC is the total population by the total area (i.e. d = ΣP/ΣA). Red circle is 25 nm from BOH.

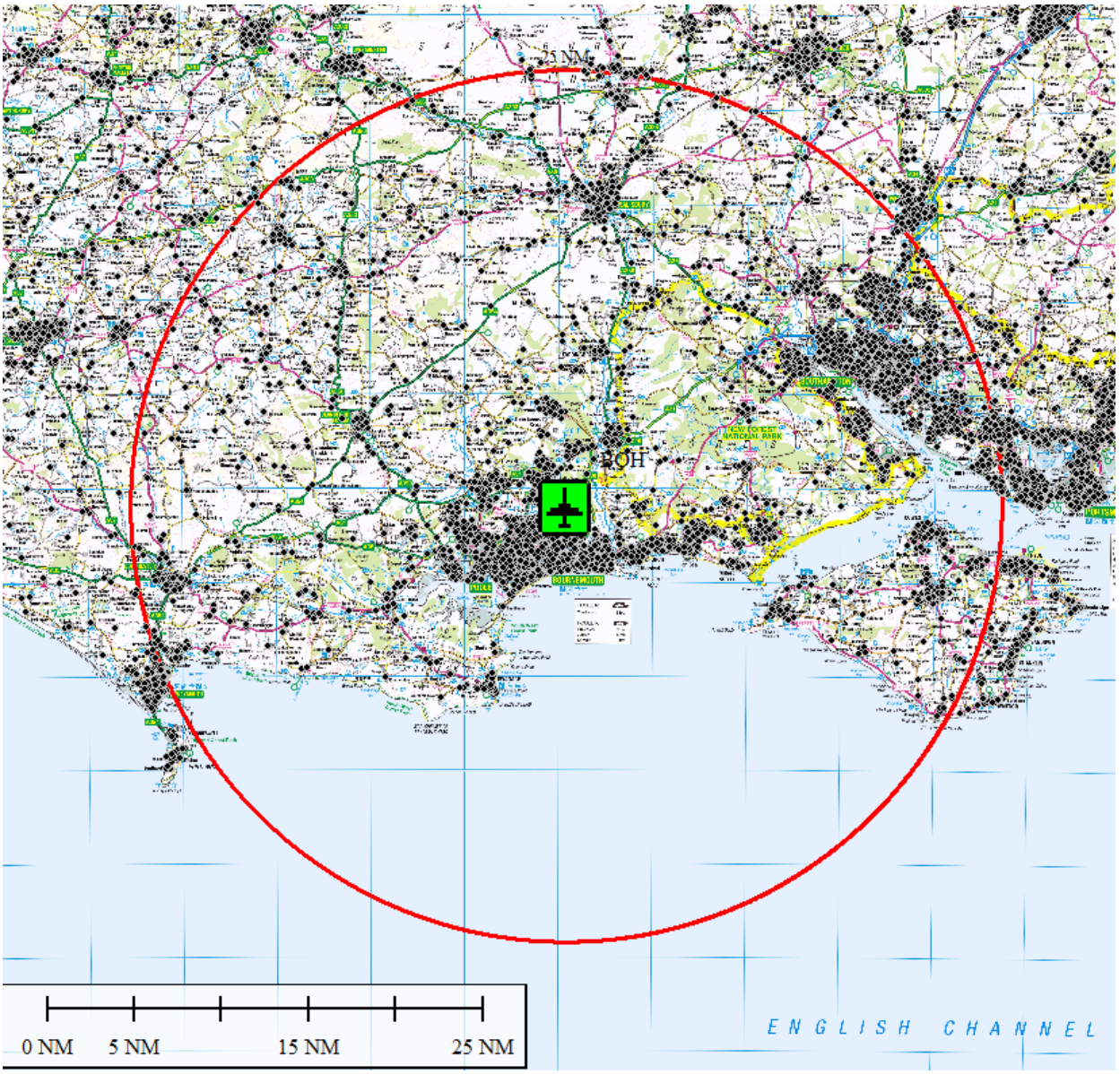


Figure 32: Population Density Map

[15] Data retrieved from Output Areas (December 2021) EW Population Weighted Centroids (V3) | Open Geography Portal

D.2. Air quality was assessed by identifying AQMAs around the airport using data retrieved from DEFRA's UK Air Information Resource AQMA interactive map. The yellow area is the closest AQMA and is approximately 7 nm from the airport. It is located at Ashley Road in Upper Parkstone

Figure 33: Air Quality Map

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