



# Design Principles Evaluation Report

Stage 2 Develop and Assess

## Document Details

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# 1 Introduction

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## 1.1 Background

The London Stansted Airport (STN) Airspace Change Proposal (ACP) is currently at Stage 2 – Develop and Assess - of the CAA’s CAP1616 Airspace Design process. Step 2A requires the sponsor to develop a comprehensive list of options that address the Statement of Need (SoN) and that align with the Design Principles that were developed at Stage 1.

This **Design Principle Evaluation (DPE)** sets out London Stansted’s response to that requirement, by presenting the assessment of the options identified in the Design Options Report (DOR) against the Design Principles. This DPE forms part of the suite of documents submitted to the Civil Aviation Authority (CAA) at Gateway 2 of the CAP1616 process and is intended to be read alongside these documents.

The full suite of Stage 2 submission documents is:

- Stage 2 Summary Document, which draws together the key points from the Stage 2 submission; DOR, which sets out London Stansted’s approach to the design process and the output of that process in the form of design options for both departures and arrivals at the airport. It presents the design options identified and describes how those options were refined to provide the comprehensive list of options to be progressed to the design principle evaluation, as reported in the Design Principle Evaluation Report (DPE).
- This DPE, which assesses how the design options have responded to the Design Principles and identifies those that warrant further analysis at the next step: the Initial Options Appraisal at Step 2B.
- Initial Options Appraisal Report (IOA), which is the first iteration of the three option appraisals required by CAP1616 - the design options appraised within the IOA are the outputs from the Design Principles Evaluation (DPE). The purpose of the IOA is to provide, at a minimum, a qualitative assessment of each option providing stakeholders and the CAA with the relative differences between impacts, both positive and negative; and
- The Stakeholder Engagement Report, which explains how engagement has been used in the processes described in the other Stage 2 documents and records its outputs.

The Summary Document provides details of the Government’s national programme of airspace change, the process under CAP1616 and the progress to date of the Airspace Change Programme (ACP) at Stansted. This information is not repeated in this report.

The full suite of reports, together with their supporting appendices, will be published on the CAA Airspace Change Portal [www.airspacechange.caa.co.uk](http://www.airspacechange.caa.co.uk).

## 1.2 Step 2A

At Step 2A, a list of design options was developed which included options that challenged how we currently operate and sought to explore how we might improve our operations, taking into account the feedback received during the engagement with stakeholders when establishing our Design Principles at Stage 1. As part of this process, the options were tested with stakeholders, as detailed in the Stakeholder Engagement Report. As part of the options development process, this initial list of design options was then subjected to an assessment which identified those routes which did not perform well against our 'must have' Design Principles of Safety, Policy and Demand. This initial assessment is described in the DOR as the 'viability filter' and resulted in a Comprehensive List of Viable Options, which we have analysed further within this DPE. In addition, this DPE presents the analysis of the 'viable but poor fit' design options against the three 'must have' Design Principles. However, as described at section 6 of the DOR, these design options were not progressed to the full DPE.

This DPE describes how each of the design options have been individually assessed against the Design Principles and how the design options have each responded to each of those Design Principles. During the stakeholder engagement undertaken during Stage 2, stakeholders provided feedback on the application of the Design Principles. In doing so, they expressed the importance in considering certain features or areas, including areas of planned property developments. This has been taken into account in the criteria used to assess the design options against the Design Principles in this DPE. For full details on Stage 2 engagement please refer to the Stakeholder Engagement Report.

In assessing the design options, we have borne in mind that the options that are eventually chosen must also be compliant with the relevant technical criteria, as detailed in Appendix F to CAP1616. Sections 5 to 29 of this document present an initial evaluation of how each route option responds to the technical criteria, identifying where plans will need to be established to resolve any compliance issues that may otherwise arise during Stage 4.

## 1.3 Purpose of the Design Principle Evaluation Process

The purpose of the DPE is to assess how the design options have responded to the Design Principles and identify those design options that warrant further analysis at the next step: the Initial Options Appraisal at Step 2B. The DPE process also identified design options that should be rejected at this stage due to a lack of alignment with the Design Principles; the process of evaluating the Design Principles, is detailed at section 3. The evaluation assessment criteria and accept/reject criteria are detailed at section 4.

## 1.4 List of Design Principles

The work undertaken during Stage 1 established a set of Design Principles to act as a framework against which design options have been evaluated. The list of Design Principles is shown in Table 1 below, while the Design Principles Report submitted to the CAA at the Define Gateway can be found here [Design Principles Report](#).

Design Principle Designation	Design Principle Description
<b>S</b>	<p>Safety</p> <p>Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>
<b>P</b>	<p>Policy</p> <p>Any changes must be consistent with the CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>
<b>D</b>	<p>Demand</p> <p>The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>
<b>C</b>	<p>Change</p> <p>Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>
<b>T</b>	<p>Technology</p> <p>Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>
<b>N1</b>	<p>Noise 1</p> <p>In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown</p>
<b>N2</b>	<p>Noise 2</p> <p>The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>
<b>N3</b>	<p>Noise 3</p> <p>Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets, and sites providing care.</p>
<b>B</b>	<p>Balance</p> <p>Our designs will consider both noise and emissions and seek to strike the best balance. In so doing, we will take account of the Government’s</p>

	altitude-based priorities, which emphasise minimising noise below 7,000 feet.
<b>E</b>	<p>Efficiency</p> <p>We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for emergency services.</p>
<b>A</b>	<p>Alternatives</p> <p>Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>

Table 1 - List of Design Principles

## 2 Comprehensive List of Viable Options

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### 2.1 Procedure Options

In accordance with its SoN, STN is seeking to modernise its airspace arrangements for aircraft operating to and from the Airport at altitudes of 7,000 feet and below. The SoN can be found here [Statement of Need](#)

This means that the airport is considering new departure and arrival routes as part of a coordinated plan for airspace modernisation along with other airports in the south-east of England. This will ensure that the airport can make use of new technologies so that the operational efficiency and environmental benefits that modern aircraft offer can be realised. In doing so, the airport seeks to introduce optimised procedures that will integrate fully with other airports and the wider airspace system.

Currently, the airport relies on conventional, ground based navigational aids that are reaching the end of their life. In accordance with international obligations to transfer to PBN, a number of these aging navigational aids are due to be withdrawn as it is no longer possible (due to unavailability of spares or trained personnel) for them to be maintained. The current procedures use a system of navigational beacons or points, each with a unique name, such as UTAVA, NUGBO, Barkway (BKY), Clacton (CLN) or Detling (DET). If new routes are introduced, new navigational points will be established, each will have a new name assigned, and these will not be associated with beacons.

Table 2 below contains a summary of the existing procedures in use at STN, together with the list of options under assessment within this DPE.

**NOTE:** In some instances, the term “replication” is used. This refers to a route design that has been developed to match an existing route, which is already in use, as far as is practicable. This provides a ‘do minimum’ option, as described in further detail at section 4.4 in the DOR. Most of the current route tracks can vary due to a number of factors including aircraft type, proficiency of pilot, weather conditions and the type of Flight Management System (FMS) on board a given aircraft. Routes designed using satellite navigation are normally flown more consistently. As a result, it is impossible to replicate a conventional procedure and its effects using a satellite-based procedure exactly. However, the design process has taken account of the potential for anomalies when replicating existing routes.

### 2.2 Design Options Development

Step 2A requires the sponsor to develop a comprehensive list of options that address the SoN and that align with the Design Principles that were developed at Stage 1. The DOR details the design process at London Stansted and lists the design options developed for both departures and arrivals.

As the sponsor of the ACP, STN tested these options with the stakeholders that contributed to the development of the Design Principles. The engagement carried out during Step 2A is detailed in the Stakeholder Engagement Report.

A summary of the options described in the DOR and assessed in this DPE is provided in Table 2, below. This sets out the number of options assessed for each of the design envelopes, along with a high-level description of those options.

Procedure	Number of Options	Basic Description
Conventional SID from RW 22 and RW 04	5	Conventional departures from each runway to UTAVA /NUGBO/BKY and CLACTON (CLN), DETLING (DET)/LYDD
<u>SID RW 22 WEST</u>	15	This envelope consists of the ten options in and around the WEST letterbox (IVO UTAVA and NUGBO) including different navigation specification (RNAV1 and RNP1 with RF) replication of the existing conventional departures to the letterbox. The routes that are closest to UTAVA are annotated as 'A' and those that route closer to NUGBO are annotated 'B'.
<u>SID RW 22 SOUTH-WEST</u>	5	This envelope consists of the five options in and around the SOUTH-WEST letterbox (IVO ENFIELD) including different climb gradients providing for a continuous climb to 7,000 feet and initial track adjustments to up to 15 degrees.
<u>SID RW 22 SOUTH</u>	6	This envelope consists of the six options in and around the SOUTH letterbox (IVO LAM) including different navigation specification (RNAV1 and RNP1 with RF) replication of the existing conventional departures to the letterbox.
<u>SID RW 22 SOUTH-EAST</u>	5	This envelope consists of the five options in and around the SOUTH-EAST letterbox (IVO DET) including different navigation specification (RNAV1 and RNP1 with RF) replication of the existing conventional departures to the letterbox.
<u>SID RW 22 EAST</u> (Current CLN 1E)	3	This envelope has been created for traffic routing to the east from RWY 22 at 8% climb gradient and consists of three options. The envelope is based around the current conventional CLN8R SID and the CLN1E SID, which is already designed to RNP1 with RF legs. The design of this RNP1 SID uses a non-PANS OPS compliant turn radius, however this route has been approved for use by the CAA via a supporting Safety Case and has been safely and accurately flown for over 3 years.

		<p>On this basis, and consistent with our criteria, this is a Viable design option to be included. The minimum climb gradient is being increased from 3.3% to 8%.</p> <p>The current CLN1E SID is used by traffic departing Stansted and heading to the east.</p>
<u>SID RW 22 NORTH</u>	8	<p>This envelope consists of the eight options in and around the NORTH letterbox (IVO BKY D7) including different navigation specification (RNAV1 and RNP1 with RF) replication of the existing conventional departures to the letterbox as well as different established bearings after the first turn.</p>
<u>SID RW 04 SOUTH-EAST</u> (Current DET 1D)	4	<p>This envelope has been created for traffic departing to the south from RWY 04 and consists of four options. The envelope is based around the existing LAM2S SID and all options have been developed with a climb gradient of 8%.</p> <p>The current LAM2S SID is restricted for use by traffic departing STN and heading to London Heathrow (LHR) only. This is because of inbound traffic to LHR holding at the LAM hold. However, bilateral discussions within the LTMA have identified the possibility of changes to current holding arrangements for Heathrow which may make this airspace available. This route is therefore being considered as a southbound envelope for STN, subject to the interactions with the LHR operation (and others within the London TMA) being resolved.</p> <p>The exception to this is Option 6, which is intended to provide a viable option for traffic departing Stansted requiring to route to the south-west as a result of airline stakeholder feedback.</p> <p>This envelope will considerably reduce the track miles flown for southbound departures and result in a significant fuel and CO<sub>2</sub> saving. when compared to the current NUGBO departure.</p>
<u>SID RW 04 EAST</u>	6	<p>These options include an approximate RNAV replication of the current departure to CLN.</p>
<u>SID RW 04 NORTH EAST</u>	4	<p>These options include a several options routing to a new letterbox in the NORTH-EAST currently designated as "COLNE". These options include different climb rates and indicate how they could be truncated for higher climb rates which means that they enter the airways network earlier, which may reap noise and fuel benefits (subject to further assessment). This letterbox will reduce the track miles for aircraft flying to northern Europe and Scandinavia and could be uses as a</p>



		potential respite route for RW04 Departures that would normally route towards CLN.
<u>SID RW 04 NORTH</u>	7	These options include approximate RNAV replication of the current departure ending at BKY D7. There are five options included to show how the tracks might be altered.
<u>SID RW 04 WEST</u>	10	This envelope consists of the seven options in and around the WEST letterbox (IVO UTAVA and NUGBO) including different navigation specification (RNAV1 and RNP1 with RF) replication of the existing conventional departures to the letterbox. The routes that are closest to UTAVA are annotated as 'A' and those that route closer to NUGBO are annotated 'B'.
<u>SID RW 04 SOUTH</u>	6	This envelope includes three options in and around the SOUTH letterbox (IVO LAM) including different navigation specification (RNAV1 and RNP1 with RF) replication of the existing conventional departures to the letterbox. It also includes different definitions of the turn to the south-west (tighter and wider). It also includes an option that remains within the envelope but routes towards ENF.
Transitions	0	No current Transition procedures. Aircraft are vectored by ATC to join the approach procedure.
<u>Transition Option 1</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF for each RW. Assumes procedure starts at a point to the SE of STN, equidistant to each RW threshold.
<u>Transition Option 2a</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF for each RW. Procedure starts within the overhead and then turns downwind to the northwest of STN (left base RW 04; right base RW 22).
<u>Transition Option 2b</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF for each RW. Procedure starts within the overhead and then turns downwind to the southeast of STN (right base RW 04; right base RW 22).
<u>Transition Option 3</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF for each RW. This is similar to Transition Option 1, but the start point for the procedure is further away from STN. The procedure commences just laterally to the north of the LSA CTR.

<u>Transition Option 4</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF for each RW. This option is almost a mirror image of Option 1. The start point for the procedure is equidistant from each RW threshold but set to the northwest of STN.
<u>Transition Option 5</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF for each RW. This option is almost a mirror image of Option 3 but this is set to the northwest of STN. The start of the procedure is equidistant from each RW threshold.
<u>Transition Option 6</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF for each RW. This is a transition to cater for aircraft arriving from the CLN area (or from the east in general). It is closer to RW 22 THR, and therefore it is more difficult to provide for a CDA for RW 04.
<u>Transition Option 7</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 ft FAF for each RW. This option caters for arrivals from the north (BKY) area). It is closer to RW 22 THR, and therefore it is more difficult to provide for a CDA for RW 04.
<u>Transition Option 8</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF for each RW. This is similar to option 6, but the start point is further south. However, it is still closer to RW 22 THR, and therefore it is more difficult to provide for a CDA for RW 04.
<u>Transition Option 9</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF for each RW. This is almost a mirror image of Transition Option 8, and is therefore off-set to the north of STN. However, it is still closer to RW 22 THR, and therefore it is more difficult to provide for a CDA for RW 04.
<u>Transition Option 10</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF for each RW. This option is a mirrored image of Transition Option 4: the start point is offset to the west of STN. It is closer to RW 04 than RW 22. Therefore, it may be challenging to develop a CDA for RW 22.
<u>Transition Option 11</u>	4	Two options – one at 2,500 feet FAF, and the other at 3,000 feet FAF. This option is similar to Transition Option 6, although the commencement of the procedure is further to the north.

Conventional and RNAV approaches to each runway	8	Conventional approaches (ILS/DME/NDB, LOC/DME/NDB, NDB/DME, RNP and SRA) and RNAV approaches to each runway.
Approach to RW 04	2	Two 3° approaches: one with 2,500 feet FAF and one with 3,000 feet FAF.
Approach to RW 22	2	Two 3° approaches: one with 2,500 feet FAF and one with 3,000 feet FAF.

Table 2 – Summary of Existing Procedures and Numbers of Options Being Considered

## 3 Design Principle Evaluation (DPE)

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### 3.1 Evaluation of the Options against the Design Principles

Each option has been assessed against the list of Design Principles shown in Table 1 in section 1 above.

The Design Principles have been examined to identify a process of evaluating each design option against a set of criteria which assesses the option's alignment with the Design Principles. The resulting Evaluation Matrices are shown below together with a full description of how the routes have been measured against the Design Principle. Where it has not been possible to fully evaluate each option at this stage, we have made this clear within the assessment. As described in further detail at section 30, Next Steps, of this DPE, further analysis will be undertaken if required.

Section 4.4 to 4.14 below give an overview of the evaluation carried out for each Design Principle. Each Table relates to a single Design Principle and shows a summary of the analysis conducted for each option against that Design Principle, together with a high-level assessment of whether the Design Principle is either not met, partially met, or fully met, as follows:

- A **green** box indicates that the Design Principle has been **met** by the specified option.
- An **orange** box means that the Design Principle has been **partially met** by the specified option.
- A **red** box indicates that the Design Principle has **not been met** by the specified option.
- Further detail on the criteria for the evaluation of each option is shown within sections 4. What constitutes "met", "partially met" and "fully met" for each design principle is explained in turn in relation to that principle. Sections 5 to 28 then provide an analysis of each option against those criteria.

### 3.2 Description of 'Do Nothing'

The CAP1616 process requires STN to consider the 'do nothing' scenario and 'do minimum' options for the ACP. The 'do nothing' scenario is then used as the baseline for comparison in the Options Appraisals, including the IOA. The 'do minimum' options describe the minimum changes required to address the issues identified in the SoN and are listed as design options for assessment in this DPE. As the 'do nothing' scenario fails to comply with the requirements of the AMS and does not align with the 'must have' Design Principles, it was not assessed as an option in this DPE.

A description of and rationale for the 'do nothing' scenario and the 'do minimum' options for both arrivals and departures is provided at section 4.4 of the DOR and is not repeated here.

## 4 Acceptance/Rejection Criteria

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### 4.1 Introduction

In order to ensure consistent application of each design principle, a set of underlying criteria were developed. These are explained in this chapter.

### 4.2 Acceptance/Rejection Criteria for Departures Options

The criteria for each design principle are set out in section [4.4 – 4.14], below. In applying these criteria to the design options, the acceptance and rejection criteria detailed at sections 4.2 and 4.3 were considered. Acceptance/Rejection Criteria for Departures Options

In order to qualify for further consideration, i.e. to be accepted, departures options were taken forward if they were:

- The 'best-performing' option within each design envelope, and any other options evaluated as equal to the 'best-performing' option,
- The 'next-best' option within each design envelope, and any other options evaluated as equal to the 'next-best' option,
- All 'do minimum' departure options,

As a minimum, accepted options must partially meet the 'must have' Design Principles of Safety, Policy and Demand. Any option not evaluated as equal to either the 'best-performing' or 'next-best' options was rejected. However, a qualitative professional judgement may be applied to justify the acceptance of further options.

Where options were accepted, these progressed to the IOA at Step 2B. Rejected options were not progressed.

### 4.3 Acceptance/Rejection Criteria for Arrivals Options

In order to qualify for further consideration, i.e. to be accepted, arrivals options were taken forward if they were:

- The 'best-performing' option, and any other options evaluated as equal to the 'best-performing' option, from each envelope, for each Final Approach Fix (FAF), of the arrivals options:
- RW 22 options presented from the East
- RW 22 options presented from the West
- RW 04 options presented from the East
- RW 04 options presented from the West
- The 'next-best' option, and any other options evaluated as equal to the 'next-best' option, from each envelope.
- This list of accepted options must qualify as reciprocals pairs.

As a minimum, accepted options must partially meet the 'must have' Design Principles of Safety, Policy and Demand. Any option not evaluated as equal to either the 'best-performing' or 'next-best' options was rejected. However, a qualitative professional judgement may be applied to justify the acceptance of further options.

As for the departure options, where options were accepted, these progressed to the IOA at Step 2B. Rejected options were not progressed.

## 4.4 Design Principle Criteria - Safety

<p><b>Design Principle</b></p> <p style="font-size: 2em; font-weight: bold; margin-top: 20px;">S</p>	<p>Safety</p> <p>Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>		
	<p><b>Not met</b></p> <p>There is insufficient evidence to demonstrate that the option is safe.</p> <p>AND/OR</p> <p>From the assessment carried out, this option does not meet the requirement of being within safety tolerances as understood in the aviation industry.</p>	<p><b>Partial</b></p> <p>There is satisfactory evidence to demonstrate that the option is safe. However, additional safety mitigations or processes would be required to safely accommodate the option.</p> <p>OR</p> <p>The route is not compliant with PANS-OPS but there is sufficient evidence to demonstrate that it can be flown safely.</p>	<p><b>Met</b></p> <p>There is sufficient evidence to demonstrate that the option is safe.</p> <p>This option meets the criteria of being justifiably safe.</p>
<p><b>Evaluation assessment summary</b></p>	<p>In order to deliver a high level of safety, all of the design options have been developed by UK CAA approved Instrument Flight Procedure designers. All our new or amended options have been designed to ICAO PANS-OPS criteria and therefore fulfil the regulatory requirements. As a result, each route option has initially been assumed to be safe, although as the process moves forward and further safety analysis is carried out (at Stage 3), some will present a better or poorer fit against this Design Principle. These options may require additional procedures or processes to be implemented to ensure that they fulfil the criteria of being 'safe'.</p> <p>For the purposes of this DPE, each option has been assessed in isolation. As part of Stage 3, Consult, the CAP1616 process requires design options to be grouped together - for example, a suite of arrivals with a suite of departures. This may identify other hazards not considered at this stage, that may lead to options being rejected, or other mitigations being introduced. Our proposal to consider any such scenario is set out at section 30, Next Steps, of this DPE.</p> <p>The primary means to provide safety assurance evidence, to support the introduction of the new procedures is a Safety Case. The Safety Case will be developed in accordance with the guidance provided in CAP 760 "Guidance on the Conduct of Hazard Identification, Risk Assessment and the Production of Safety Cases" as mandated in the Stansted Airport Safety Management Process and aligned to the CAP1616 process.</p> <p>The first step in the development of the Safety Case was a Hazard Identification (HazID) held with relevant aviation stakeholders, including local and enroute ATC and airlines. This identified the safety requirements at an early stage of the design process, and it has been used to support early qualitative analysis of the design options. As the process moves forwards, a more quantitative approach will be adopted using the Safety Case Approach. This will initially evaluate routes in isolation but ultimately will evaluate combinations (families) of routes as a system.</p>		

<b>Evaluation assessment criteria</b>	1. Has this option been designed in compliance with Performance Based Navigation requirements? (ICAO PANS-OPS)
	2. If the route is not compliant with PANS-OPS criteria, is there evidence that the route can be flown safely?
	3. Does the design option require additional procedures or protocols to be introduced to ensure that it is operated safely?
<b>Summary</b>	<p>Each option has been assessed against the above criteria to ensure that it satisfies our requirement for all new or existing PBN design options to be safe.</p> <p>There will be further assessments conducted at a later stage of the ACP, see section 30, Next Steps, when we will consider whether combinations of routes still satisfy this Design Principle.</p>



## 4.5 Design Principle Criteria - Policy

<b>Design Principle</b>  <b>P</b>	<b>Policy</b>  Any changes must be consistent with the CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.		
	<b>Not met</b>  The option is not considered likely to be consistent with the Airspace Modernisation Strategy and/or the FASI-S programme.	<b>Partial</b>  The option is considered likely to be consistent with the Airspace Modernisation Strategy and the FASI-S programme. However, further work with other sponsors and airspace users may be necessary to ensure that it represents a practicable solution.	<b>Met</b>  The option is considered likely to be consistent with the Airspace Modernisation Strategy and the FASI-S programme and takes into account the needs of other change sponsors and airspace users.
<b>Evaluation assessment summary</b>	<p>The CAA's Airspace Modernisation Strategy (CAP1711) sets out detailed initiatives that the aviation industry must deliver to achieve the Government's objectives in relation to airspace modernisation. CAP1711 details the outcomes that airspace modernisation must bring, under six broad headings, of which STN notes the following:</p> <ul style="list-style-type: none"> <li>• safety: maintaining a high standard of safety has priority over all other ends to be achieved by airspace modernisation. This is achieved by reducing the complexity of airspace structures, the introduction of new technologies to help manage any residual risk, reduced controller workload through the introduction of new routes that are separated by design and the introduction of new technologies that automate controller tasks.</li> <li>• efficiency: consistent with the safe operation of aircraft, airspace modernisation should secure the most efficient use of airspace and the expeditious flow of traffic. This includes the removal of dependence upon ground navigation beacons.</li> <li>• integration: airspace modernisation should satisfy the requirements of operators and owners of all classes of aircraft across the commercial, General Aviation and military sectors. It should facilitate greatest possible access to all users.</li> <li>• environmental performance: the interests of all stakeholders affected by the use of airspace should be taken into account when it is modernised, in line with guidance provided by the Government on environmental objectives, the Air Navigation Guidance 2017, which sets out how carbon emissions, air quality and noise should be considered. More efficient, shorter and cost-effective flightpaths should be considered, as well as enabling CCO and CDA, the redesign of arrival and departure routes, allowing for noise impacts to be redistributed away from more noise sensitive areas and the introduction of respite (routes).</li> <li>• defence and security: airspace modernisation should facilitate the integrated operation of air traffic services provided by or on behalf of the armed forces and take account of the interests of national security.</li> <li>• international alignment: airspace modernisation should take account of any international recommended practices or obligations related to the UK's air navigation functions, such as those from ICAO and the EU.</li> </ul> <p>In summary, CAP1711 states that modernisation in airspace at lower altitudes (up to 7,000ft), must deliver:</p>		

	<ul style="list-style-type: none"> <li>• Safety - precision routes, separated by design – Performance Based Navigation.</li> <li>• Efficiency - greater runway throughput by deploying dedicated routes for each airport (removing existing route conflicts with adjacent airports), to secure more efficient use of airspace and strengthened resilience</li> <li>• Environment - shorter track miles and continuous climbs / descents to reduce emissions per flight</li> <li>• Noise - opportunities to better manage noise impacts</li> </ul> <p>Future Airspace Strategy Implementation – South (FASI-S) is an initiative to deliver the requirements of the AMS, through the re-design of airspace in the south of the UK. As such, FASI-S requires coordination between various airspace change sponsors. This coordination will be delivered through a masterplan of airspace changes prepared and delivered by the Airspace Change Organising Group (ACOG)</p> <p>Other Airspace users/considerations will be covered through regular bilateral (or if required, trilateral) meetings with airports and NATS. These meetings will also be attended by ACOG in order to align the airport work with the airspace masterplan, and within these meetings, discussion points will include...</p> <ul style="list-style-type: none"> <li>• The operating concepts being applied, such as climb gradients, PBN standard and the use of systemisation.</li> <li>• An analysis of the design options that have been developed, and where conflicts may occur. These conflicts may be related to any of the Design Principles or local operating practices and restrictions but will be primarily driven by Safety.</li> <li>• Agreement on options to resolve conflicts. These conflict resolution discussions and decisions will be formally recorded by both the airports and ACOG and will be used to support final submissions to CAA to demonstrate where concessions have been made. Where a conflict cannot be resolved, the ACOG resolution process will be triggered.</li> <li>• The potential for cumulative impact issues to arise from the routes, and how these should be addressed in engagement material.</li> </ul> <p>In addition, ACOG have created the Technical Coordination Group which will meet regularly to discuss and resolve policy and technical issues affecting airspace design across all airports. These Group meetings focus on:</p> <ul style="list-style-type: none"> <li>• Programme wide technical topics</li> <li>• Technical deployment issues</li> <li>• Safety assurance</li> <li>• Benefits Management</li> </ul> <p>The output of the meetings will inform other deployment groups and the Masterplan.</p>
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<b>Evaluation assessment criteria</b>	1. Is the design option anticipated to be compliant with UK’s international obligation for implementing Performance Based Navigation?
	2. Compared to the ‘do minimum’ scenario, does the design option contribute to a potential reduction in the number of track miles flown?
	3. Does the design option facilitate the delivery of Continuous Climb Operations (CDO) or Continuous Descent Approaches (CDA)?

	<p>4. At the time of the DPE, is the route option consistent with the emerging FASI-S airspace change Masterplan?</p>
	<p>5. Does this route demand additional airspace to be contained in accordance with the CAA's Containment Policy?</p>
	<p>6. Does this route present the opportunity to reduce the amount of Controlled Airspace (CAS) required by Stansted Airport?</p>
	<p>7. Does the design option take full account of the needs of other airspace users?</p>
<p><b>Summary of evaluation</b></p>	<p>Each option has been assessed against the above criteria to ensure that it satisfies our requirement for all new or existing PBN design options to meet the requirements of the Airspace Modernisation Strategy.</p> <p>It is not possible to assess CAS demands based upon on individual design options. Assessments will be conducted at Stage 3 of the ACP process that will consider to what extent combinations of routes satisfy this Design Principle. See section 30 for Next Steps.</p>

## 4.6 Design Principle Criteria - Demand

<b>Design Principle</b>  <b>D</b>	<b>Demand</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.		
	<b>Not met</b>  This option potentially reduces operational efficiency compared to ‘do minimum’.  AND/OR  The design option cannot operate as part of a system to deliver up to 55 movements per hour, as it is unable to operate independently from the airborne holds, arrival routes and departure routes of adjacent airports and those of STN.	<b>Partial</b>  This option may limit operational efficiency. as it could not be used in conjunction with some design options in other directional ‘peer groups’.  AND/OR  The designs can deliver up to 55 movements per hour in most cases, but because of interactions, this may be reduced under certain circumstances (e.g., traffic mix of certain aircraft types)	<b>Met</b>  This option will operate efficiently in combination with all design options, in other directional ‘peer groups’.  AND/OR  The design option can operate as part of a system to deliver up to 55 movements per hour, as it is able to operate independently from the airborne holds, arrival routes and departure routes of adjacent airports and those of STN.

<p><b>Evaluation assessment summary</b></p>	<p>The UK travel industry has been impacted by the global pandemic, but air traffic levels are expected to fully recover. In the long term, we believe that demand at Stansted will continue to grow and will result in us reaching a passenger capacity of 43 million per annum, consistent with the level permitted by the recent planning decision at Stansted.</p> <p>Passenger demand also drives the number of aircraft using the airport, and this is constrained by the capacity of the runway, the taxiway infrastructure and the airspace. Runway capacity is generally defined as the expected number of aircraft movements that can be operated per hour. At Stansted, a runway capacity of 55 movements per hour (combined arrivals and departures) is a realistic maximum, based on the above factors. Our chosen airspace solution should therefore provide for this level of throughput consistently throughout the day (as opposed to occasional peaks).</p> <p>To achieve this will require routes that operate effectively as a system and in conjunction with other routes in directional peer groups. However, because this Design Principle is looking at individual routes (rather than the system) this analysis looks at the potential ability of the route to achieve this consistent movement rate of 55 per hour against largely external factors.</p> <p>The analysis therefore assesses the ability of the route to operate:</p> <ul style="list-style-type: none"> <li>• independently from the airborne holds, arrival routes and departure routes of adjacent airports.</li> <li>• independently from the arrival structure or arrival routes for Stansted Airport.</li> <li>• without entering airspace that is the responsibility of an adjacent airport e.g., Heathrow or Luton</li> <li>• to support departure splits of 1 min</li> </ul> <p>If any of the above are evaluated to not be met by a design option, restrictions (typically in the form of departure flow rates) may be imposed by Air Traffic Control (ATC), resulting in a reduced hourly runway capacity and a failure to meet the demand Design Principle.</p>
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<p><b>Evaluation assessment criteria</b></p>	<ol style="list-style-type: none"> <li>1. Is this option able to operate independently from the airborne holds, arrival routes and departure routes of adjacent airports?</li> <li>2. Is this option able to operate independently from the arrival structure or arrival routes for Stansted Airport?</li> <li>3. Is this option able to operate without entering airspace that is, or will be the responsibility of an adjacent airport or FASI-S sponsor, to support departure splits of one minute?</li> </ol>
<p><b>Summary of evaluation</b></p>	<p>Each option has been assessed against the above criteria to ensure that it satisfies our requirement for all new design options to ensure that the airport can continue to meet its utilisation of aircraft numbers in accordance with the current planning permissions.</p> <p>There will be further assessments conducted at Stage 3 of the ACP process that will consider if combinations of routes still satisfy this Design Principle. See section 30 for Next Steps.</p>

## 4.7 Design Principle Criteria - Change

<b>Design Principle</b>  <b>C</b>	<b>Change</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.		
	<b>Not met</b>  This option flies over different areas to those overflowed at present and when compared to the baseline, does not provide benefits in relation to: <ul style="list-style-type: none"> <li>- the number of people overflowed,</li> <li>- the overflight of planned property developments,</li> <li>- the overflight of noise sensitive receptors.</li> </ul>	<b>Partial</b>  This option flies over some new areas and when compared to the baseline, provides some benefits in relation to: <ul style="list-style-type: none"> <li>- the number of people overflowed,</li> <li>- the overflight of planned property developments,</li> <li>- the overflight of noise sensitive receptors.</li> </ul>	<b>Met</b>  This option flies over some new areas and provides benefits in relation to all the following: <ul style="list-style-type: none"> <li>- the number of people overflowed,</li> <li>- the overflight of planned property developments,</li> <li>- the overflight of noise sensitive receptors.</li> </ul> <p>Or</p> This route does not fly over new areas.

<p><b>Evaluation assessment summary</b></p>	<p>The CAP1616 process requires sponsors to take a completely fresh look without preconception when considering changes to aircraft arrivals and departures and airspace design and this was a key theme during the development of our Design Principles. Whilst it is inevitable that some constraints will exist, the CAP1616 process requires an objective assessment of the existing and proposed operations to ensure that all viable options are considered. Adhering to this process may introduce options that overfly areas that are not currently overflown, and conversely may avoid areas that are currently overflown.</p> <p>A fresh approach to airspace design was something that was specifically mentioned during our engagement to establish the Design Principles. The stakeholders cited benefits such as reduction in noise exposure, and fuel burn as being benefits of a proposed change.</p> <p>At Stage 2 of the process, most assessments are qualitative and only a limited amount of quantitative assessment is carried out due to the high volume of options under consideration. However, we have conducted an overflight assessment of the new design options, and of the 'do minimum' baseline, to understand the changes the new routes will introduce. This provides an indication of the net change.</p> <p>At Stage 3, more detailed quantitative analysis will be made, in order to inform the Full Options Appraisal. This will be used to identify those options taken to public consultation and options carried forward from Stage 2 to Stage 3 may be discounted as part of that analysis.</p> <p>Stansted Airport understands that tolerance of exposure to aircraft noise is a personal and subjective matter. Equally, predictability is important for people to understand where aircraft may fly in the future. New areas will only be overflown if there are clear benefits in doing so, such as the ability to support better climb and descent profiles that aim to reduce the number of people affected by aircraft noise, and to reduce fuel burn.</p>
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<p><b>Evaluation assessment criteria</b></p>	<ol style="list-style-type: none"> <li>1. Will this route overfly new areas, not currently overflown?</li> <li>2. When compared to the 'do minimum', is this route expected to reduce the current number of people affected by aircraft noise?</li> <li>3. At the time of writing, is this route expected to overfly planned property developments?</li> <li>4. Compared to the 'do minimum', how does this route compare with the overflight of noise sensitive receptors?*</li> </ol>
<p><b>Summary of evaluation</b></p>	<p>Each option has been assessed against the above criteria to ensure that it satisfies our requirement for all new design options to ensure that, if new areas are overflown, there are clear and objective benefits in doing so.</p> <p>There will be further, more detailed, noise evaluation and overflight assessments conducted at Stage 3 of the ACP process. At that stage, we will consider if combinations of routes still satisfy this Design Principle.</p> <p>* For the DPE, the overflight analysis considered the following noise sensitive receptors:</p> <ul style="list-style-type: none"> <li>• Noise sensitive buildings (Hospitals, Hospices, Care Homes, Schools, Colleges, Universities and Places of Worship),</li> <li>• Areas of Outstanding Natural Beauty (AONBs)</li> <li>• Areas designated as SSSI,</li> <li>• National Parks,</li> <li>• Country Parks,</li> </ul>



## 4.8 Design Principle Criteria - Technology

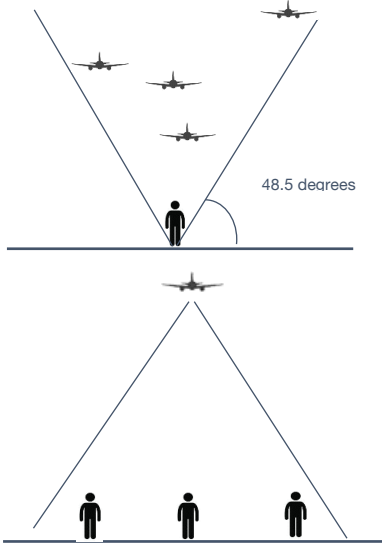
<p><b>Design Principle</b></p> <p><b>T</b></p>	<p>Technology</p> <p>Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate Continuous Climb Operations (CCO) and Continuous Descent Approaches (CDA) to/from both ends of the runway.</p>		
	<p><b>Not met</b></p> <p>It is not possible to design a route to PBN specification for this design option.</p> <p>And/or</p> <p>The design option will not permit a CCO or CDA as appropriate.</p>	<p><b>Partial</b></p> <p>It is possible to design a route to PBN specification for this option, but work is required to confirm that the route is flyable and/or is fully compliant with route design rules.</p> <p>And/or</p> <p>Interactions with other routes mean that a CCO or CDA is difficult to achieve.</p>	<p><b>Met</b></p> <p>It is possible to design a fully compliant PBN route.</p> <p><b>And</b></p> <p>The design option will permit a CCO or CDA as appropriate.</p>
<p><b>Evaluation assessment summary</b></p>	<p>Aircraft taking off from or landing at Stansted Airport currently do so flying ‘conventional’ departure and arrival routes. Conventional routes use a network of ground-based navigation aids to provide guidance to aircraft on departure and arrival. However, this technology is becoming obsolete, and these navigation aids are gradually being withdrawn from service. As a result, in the future, all guidance will be provided via satellites to on-board aircraft systems. This is known as Performance Based Navigation (PBN).</p> <p>In its Airspace Modernisation Strategy (CAP1711), the Civil Aviation Authority (CAA) sets out detailed initiatives that the aviation industry must deliver to achieve the Government’s objectives in relation to airspace modernisation. The strategy describes the outcomes that airspace modernisation must bring, under six broad headings: safety; efficiency; integration; environmental performance; defence and security and international alignment. Of these groups, ‘efficiency’ talks, in particular about the “removal of dependence upon ground navigation beacons.”</p> <p>CAP1711 summarises the requirement by stating that modernisation in airspace at lower altitudes (up to 7,000 ft), must deliver precision routes, separated by design – PBN.</p> <p>PBN technology enables aircraft to fly along pre-determined flightpaths (including departure and arrival routes) more accurately and results in less dispersed tracks than those based on ground-based systems. However, to provide flexibility across aviation there are a range of PBN specifications that can be used, some of which result in greater accuracy of track keeping than others.</p> <p>To understand which specification aircraft operating into Stansted Airport are able to use, we carried out an aircraft fleet survey, as detailed further at section 5.6 of the DOR. This confirmed that all commercial flights can operate to a standard known as RNAV1, with a large majority also being capable of the higher RNP1 specification. Our design options are therefore being designed to each of these standards.</p>		

	<p>Under current arrangements, flightpaths are designed to conventional standards. These flightpaths are not designed to deconflict from one another and aircraft using them rely on ATC tactical intervention to facilitate safe climb or descent. This inherent inefficiency means that aircraft are often subject to periods of level flight when departing or arriving at an airport.</p> <p>In the case of arrivals, for each of these ‘steps’ there needs to be a burst of engine thrust to level out the aircraft after it has moved to a lower level. Continuous Descent Approach (CDA) is a technique where arriving aircraft descend on a smooth, continuous path from the holding patterns, avoiding the need for them to apply engine thrust to either level out or maintain a specific height. This means that the aircraft stays at a higher altitude for longer and also produces an environmental benefit by reducing fuel burn and aiding noise reduction.</p> <p>Continuous Climb Operations (CCO) are designed to enable aircraft to keep climbing after take-off until they reach a given altitude, with the aim to reach that altitude sooner, reducing the duration of noise impacts and reducing fuel burn by minimising periods of level flight.</p> <p>Both CDA and CCO require the use of aircraft technology, plus an airspace route network that facilitates this type of climb and descent. This is not currently the case at Stansted with several departure routes having level segments, and the position of the arrival hold facilities making CDAs to Runway 04 difficult to achieve.</p>
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<b>Evaluation assessment criteria</b>	1. Has this option been designed in compliance with PBN requirements? (ICAO PANS-OPS)
	2. Is further work needed to confirm that the route is flyable and/or it meets with route design rules?
	3. Does the design option facilitate the delivery of Continuous Climb Operations (CCO) or Continuous Descent Approaches (CDA)?
<b>Summary of Evaluation</b>	<p>Each option has been assessed against the above criteria to ensure that it satisfies our requirement that design options should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p> <p>Assessments will be conducted at Stage 3 of the ACP process that will consider to what extent design options satisfy this Design Principle. See section 30, Next Steps.</p>

## 4.9 Design Principle Criteria - Noise 1

<p>Design Principle</p> <p><b>N1</b></p>	<p>Noise 1</p> <p>In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown</p>		
	<p><b>Not met</b></p> <p>The number of people overflown is greater than that of the 'do minimum' option.</p>	<p><b>Partial</b></p> <p>The number of people overflown is similar to that of the 'do minimum' option.</p>	<p><b>Met</b></p> <p>The number of people overflown is fewer than that of the 'do minimum' option.</p>
<p><b>Evaluation assessment summary</b></p>	<p>The CAA's Airspace Change guidance (CAP1616) requires sponsors to assess the potential noise impact of any proposal being put forward, using a range of indicators. The level of assessment expected varies according to the scale of the change options being proposed and the stage of the change process that has been reached.</p> <p>At this stage (Stage 2) in the Airspace Change process - the number of options to be assessed is significant and the level of refinement immature. CAP1616 therefore doesn't require us (the change sponsor) to go into a full level of detail for every option on the 'comprehensive list'. Instead, CAP1616 requires the scale of assessment to be proportionate, and the appraisal must as a minimum, contain qualitative assessments of the different options.</p> <p>We recognise however, that in assessing our comprehensive list, such a qualitative approach may not always adequately reflect the extent to which an option reflects our Design Principles. We therefore intend to carry out the following quantitative assessment on all our design options and to compare these against that of a 'do minimum' scenario.</p> <p>For stakeholder engagement purposes, <math>L_{Aeq}</math> contours remain the 'primary' indicator. The contours show a set of closed lines on a map – each contour shows places where people get the same amounts of noise from aircraft, measured as <math>L_{Aeq}</math>. However, there is a recognition that local communities situated outside these 'standard' contours, may still be adversely affected by passing aircraft. To represent people and communities affected in this way, a metric to quantify 'overflight' both inside and outside standard noise contours – up to a height of 7,000ft – has been produced by the CAA – Definition of overflight (CAP1498).</p> <p>CAP1498 recognises that an aircraft does not have to pass directly overhead, to be considered an overflight. Instead, overflight should be defined to include aircraft that pass over and to the side of an observer. The distance that an aircraft can be to the side and still be considered an overflight is set using an elevation angle. An aircraft flying directly overhead would be at an elevation angle of 90 degrees. An aircraft on the ground would be at an elevation angle of 0 degrees.</p>		

	 <p>CAP1616 recommends the use of 48.5 degrees as an elevation angle for the purposes of identifying instances of overflight. This is because for an aircraft to give a noise level approximately 3dB lower than if it had flown directly overhead, it would need to be at an elevation angle of 48.5 degrees. 3dB is widely accepted as the smallest difference between two noise levels that the average person can perceive. The image shows that aircraft in the cone either side of the receptor are deemed to have overflowed it if they are at an elevation angle of more than 48.5 degrees.</p> <p>Alternatively, if we look at this from an aircraft's perspective. All locations within the cone are 'overflowed'.</p> <p>We have taken each individual design option from our comprehensive list and assessed it against this overflight definition. It is important to remember that, at this stage, our 'overflight' assessment is simply a mechanism to set out how each design option has responded to our Design Principles in terms of populations overflowed – it does not illustrate noise impacts. We will further refine this approach as we move to our Initial Options Appraisal, at which point we will introduce anticipated traffic volume and dispersion</p>
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<p><b>Evaluation assessment criteria</b></p>	<p>1. How does the number of estimated total people overflowed, including existing and future potential populations*, compare to the 'do minimum' option?</p>
<p><b>Summary of evaluation</b></p>	<p>Each option has been assessed against the above criteria to ensure that it satisfies our requirement to seek to minimise the number of people overflowed.</p> <p>* In this stage of evaluation, the overflight analysis will provide an estimate for the total number of people overflowed by taking into consideration:</p> <ul style="list-style-type: none"> <li>• the number of households currently overflowed,</li> <li>• the population currently overflowed,</li> <li>• known planned property developments as of 24th December 2021,</li> <li>• the number of proposed dwellings associated with the above developments.</li> </ul> <p>In order to estimate the future potential population:</p> <ul style="list-style-type: none"> <li>• Divide the current population identified by the number of existing households; this gives an average population per household for that option.</li> <li>• Multiply the number of proposed dwellings by the average population per household for that option.</li> <li>• Sum the existing population and the future potential population to get an estimate for the total number of people overflowed.</li> </ul> <p>From the quantitative analysis, the population count has been rounded to the nearest 100. Proposed dwellings have been rounded to the nearest 50. As required by CAP1616, there will be further, more detailed assessments carried out at a later stage of the ACP process that will consider if combinations of routes still satisfy this Design Principle.</p>

## 4.10 Design Principle Criteria - Noise 2

<b>Design Principle</b>  <b>N2</b>	<b>Noise 2</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.		
	<b>Not met</b>  N/A	<b>Partial</b>  N/A	<b>Met</b>  At this stage, when considering individual design options in isolation, it is not possible to evaluate against this Design Principle. It has therefore been assumed that all options could be used as part of a network. Performance against this Design Principle will be assessed further at Stage 3. See section 30, Next Steps.

<p><b>Evaluation assessment summary</b></p>	<p>The CAA’s Airspace Modernisation Strategy (CAP 1711) sets out detailed initiatives that the aviation industry must deliver to achieve the Government’s objectives in relation to airspace modernisation. CAP1711 details the outcomes that airspace modernisation must bring, under six broad headings:</p> <ul style="list-style-type: none"> <li>• safety</li> <li>• efficiency</li> <li>• integration</li> <li>• environmental performance:</li> <li>• defence and security</li> <li>• international alignment:</li> </ul> <p>In relation to environmental performance, CAP1711 goes on to say, the interests of all stakeholders affected by the use of airspace, should be taken into account when it is modernised. In line with guidance provided by the Government on environmental objectives, the Air Navigation Guidance 2017, sets out how carbon emissions, air quality and noise should be considered. This includes the consideration of more efficient, shorter and cost-effective flightpaths, enabling Continuous Climb Operations (CCO) and Continuous Descent Approaches (CDA), the redesign of arrival and departure routes allowing for noise impacts to be redistributed away from more noise sensitive areas and the introduction of respite (routes).</p> <p>CAP1616, the CAA’s guidance on the regulatory process for changing notified airspace design defines respite as “Planned and notified periods where overflight or noise impact are reduced or halted to allow communities undisturbed time.”</p> <p>CAP1616 expands upon the topic to saying that - if multiple routes are considered in order to provide respite, then it’s vital that the views of local communities and stakeholders are taken into consideration when deciding what might constitute a sufficient period of respite.</p> <p>At this (Step 2a) point in the airspace change process, where we are considering individual design options, we do not believe it is possible to assess an ability to deliver ‘respite’ - this will only become possible when we have grouped our design options into dependent networks. Therefore, we will not exclude any design option at this stage, on the basis of respite – all will pass and the issue will be considered more fully later in the process, when we group design options into dependent networks. In the interim, we will engage with our local communities and other stakeholders to define more clearly, how respite and relief could be used to best effect.</p> <p>Similarly, balanced runway mode (the specifying of a ‘preferential’ runway direction and associated tail-wind component is an operational mechanism to designed to reduce the number of people affected by aircraft noise. Clearly this cannot therefore be prescribed at this early stage of the airspace change process and will be addressed more, later in the airspace change process.</p>
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## 4.11 Design Principle Criteria - Noise 3

<p><b>Design Principle</b></p> <p><b>N3</b></p>	<p><b>Noise 3</b></p> <p>Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets, and sites providing care.</p>		
<p><b>Evaluation assessment summary</b></p>	<p><b>Not met</b></p> <p>The effect upon noise sensitive receptors is considered to be greater than that of the 'do minimum' option.</p>	<p><b>Partial</b></p> <p>The effect upon noise sensitive receptors is considered to be broadly the same as that of the 'do minimum' option.</p>	<p><b>Met</b></p> <p>The effect upon noise sensitive receptors is considered to be less than that of the 'do minimum' option.</p>
<p>We have applied the same overflight tool used in Design Principle N1 to estimate the number of people, households and proposed development sites overflown, to assess the extent to which our design options may similarly impact upon noise sensitive receptors.</p> <p>For the purposes of this assessment, we have considered noise-sensitive buildings to include hospitals, hospices, care homes, schools, colleges, and universities. We have also taken account of the location of Areas of Outstanding Natural Beauty, Sites of Special Scientific Interest, conservation areas and cultural or historic assets, such as theatres, concert venues or – at the request of local stakeholders – listed buildings.</p> <p>CAP1616 recommends the use of 48.5 degrees as an elevation angle. This is because for an aircraft to give a noise level approximately 3dB lower than if it had flown directly overhead, it would need to be at an elevation angle of 48.5 degrees. 3dB is widely accepted as the smallest difference between two noise levels that the average person can perceive.</p> <div data-bbox="472 1361 820 1608" data-label="Diagram"> </div> <p>Alternatively, if we look at this from an aircraft's perspective. All buildings and locations within the cone are 'overflown'.</p> <div data-bbox="477 1727 828 1991" data-label="Diagram"> </div>			

	<p>We have taken each individual design option from our comprehensive list and assessed it against the above overflight definition. It is important to remember that, at this stage, our ‘overflight’ assessment is simply a mechanism to set out how each design option has responded to our Design Principles – it does not illustrate noise impacts. We will further refine this approach as we move to our Initial Options Appraisal, at which point we will introduce anticipated traffic volume and dispersion.</p>
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<p><b>Evaluation assessment criteria</b></p>	<p>1. When compared to the ‘do minimum’ option, how does the total noise sensitive receptors compare?*</p>
<p><b>Summary of evaluation</b></p>	<p>Each option has been assessed against the above criteria to ensure that it satisfies our requirement that design options should avoid, or minimise effects upon, noise sensitive receptors.</p> <p>* For the DPE, the overflight analysis considered the following noise sensitive receptors:</p> <ul style="list-style-type: none"> <li>- Noise sensitive buildings (Hospitals, Hospices, Care Homes, Schools, Colleges, Universities and Places of Worship),</li> <li>- Areas of Outstanding Natural Beauty (AONBs)</li> <li>- Areas designated as SSSI,</li> <li>- National Parks,</li> <li>- Country Parks,</li> </ul> <p>There will be further assessments conducted at a later stage of the ACP process that will consider if combinations of routes still satisfy this Design Principle.</p>



## 4.12 Design Principle Criteria - Balance

<p><b>Design Principle</b></p> <p><b>B</b></p>	<p><b>Balance</b></p> <p>Our designs will consider both noise and emissions, and seek to strike the best balance. In so doing, we will take account of the Government’s altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>		
<p><b>Evaluation assessment summary</b></p>	<p><b>Not met</b></p> <p>This option performs worse than the ‘do minimum’ with respect to our noise Design Principles</p>	<p><b>Partial</b></p> <p>This option performs better than the ‘do minimum’ with respect to our noise Design Principles</p> <p><b>BUT</b></p> <p>increases track miles when compared to the ‘do minimum’.</p>	<p><b>Met</b></p> <p>This option performs better than the ‘do minimum’ with respect to our noise Design Principles</p> <p><b>AND</b></p> <p>this option does not increase track miles when compared to the ‘do minimum’.</p>
	<p>Each design option has been evaluated in terms of “overflight”, as an indicator of potential noise impact and track distance flown, as a proxy for fuel burn/emissions generated.</p> <p>In carrying out our assessment, we have taken account of the Government’s Air Navigation Guidance (ANG). The ANG sets out a framework of “Altitude Based Priorities”, to be taken into account when considering the potential environmental impact of airspace changes.</p> <p>The Altitude Based Priorities state that from the ground to below 4000ft the government’s environmental priority is to limit and, where possible, reduce the total adverse noise 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.</p> <p>In the airspace at or above 4,000 feet to below 7,000 feet, the environmental priority should continue to be minimising the impact of aviation noise in a manner consistent with the government’s overall policy on aviation noise, unless the CAA is satisfied that the evidence presented by the sponsor demonstrates this would disproportionately increase CO<sub>2</sub> emissions. In the airspace at or above 7,000 feet, the CAA should prioritise the reduction of aircraft CO<sub>2</sub> emissions and the minimising of noise is no longer the priority.</p> <p>In Stage 3, further detailed quantitative assessments will be conducted as part of the Final Options Appraisal to identify preferred options to be consulted on later in the process.</p>		

<p><b>Evaluation assessment criteria</b></p>	<ol style="list-style-type: none"> <li>1. Compared to the 'do minimum' does this design option potentially reduce the number of people affected by aircraft noise (N1)?</li> <li>2. Compared to the 'do minimum' does this design option overfly noise sensitive receptors, as assessed under design principle noise 3 (N3)?</li> <li>3. Compared to the 'do minimum', does the design option contribute to a potential reduction in the number of track length flown?</li> </ol>
<p><b>Summary of evaluation</b></p>	<p>Each option has been assessed against the above criteria to ensure that each route satisfies our requirement for all new design options to seek to strike the best balance between noise and emissions.</p> <p>From the quantitative analysis, the track length has been rounded to the nearest 1,000m.</p> <p>Further assessments will be conducted at a later stage of the ACP process that will consider if combining routes still satisfies this DP.</p>

## 4.13 Design Principle Criteria - Efficiency

<b>Design Principle</b>  <b>E</b>	<b>Efficiency</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for emergency services.		
	<b>Not met</b>  This option is likely to require additional controlled airspace to provide containment in accordance with the CAA Policy.  Or  The route design is inefficient in terms of either its vertical or horizontal profile.  Or  Route conflicts with other airports exist and would need to be resolved in a significant number of cases.  And/Or  Emergency services access is restricted.	<b>Partial</b>  This option is efficient in terms of its horizontal and vertical profile and does not require additional controlled airspace, but does not provide an opportunity to re-classify airspace  Or  The option may require ATC intervention to resolve/deconflict the interactions with aircraft from other airports.  Or  Emergency services can operate with appropriate priority	<b>Met</b>  This option is efficient in terms of its horizontal and vertical profile and is not likely to require additional controlled airspace  And/or  The option provides an opportunity to examine the re-classification of airspace for wider use such as GA.  And  The route has “designed out” the interaction with aircraft from other airports.  When operating normally, aircraft will not require significant ATC intervention (to resolve conflicts between aircraft).  And  Emergency services can operate with appropriate priority
<b>Evaluation assessment summary</b>	The <a href="#">CAA Controlled Airspace Containment Policy Statement</a> (January 2014) sets out the minimum criteria applicable to containment of instrument flight procedures for airports already within Controlled Airspace. Each route will be assessed against this policy statement to ensure that the minimum volume of airspace is used to contain the route within CAS. We assess whether it might be possible to reduce the volume of CAS that we currently utilise whilst still complying with the containment criteria.		

	<p>A separate assessment will be made in terms of airspace efficiency. Airspace efficiency close to an airport is typically measured in terms of a number of factors:</p> <ul style="list-style-type: none"> <li>• Delays before departure</li> <li>• Climb profile to 7,000ft – this is most efficient when CCOs are used</li> <li>• Airborne holding</li> <li>• Descent profile from 7,000ft – this is most efficient when CDAs are used</li>   <li>• Track distance – routes that operate in a straight line are more fuel efficient and will reduce CO<sub>2</sub> emissions when compared to a route with multiple turns.</li> <li>• Conflicts with aircraft from other airports which need to be resolved by ATC</li> </ul> <p>The effects of making changes to any of these factors may sometimes be complementary; for example, creating a more direct route could reduce CO<sub>2</sub> emissions. Alternatively, the factors may be in conflict; creating a more direct route may place flights in conflict with the routes from other airports making it less efficient. We will therefore need to consider a balanced approach in making decisions on airspace efficiency.</p> <p>Access to our airspace for the emergency services will always be given the highest priority. It is accepted that there may be disruptions to normal operations in order to accommodate access for Category A flights; the preservation of life is paramount.</p>
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<b>Evaluation assessment criteria</b>	1. Does this route require additional CAS in order to fully contain it in accordance with the CAA Containment Policy?
	2. Could the volume of CAS be reduced, on the basis of this single option?
	3. Will this route preclude or materially impair access by the emergency services?
<b>Summary of evaluation</b>	<p>Each option has been assessed against the above criteria to assess whether the route is likely to alter the arrangements for controlled airspace at Stansted Airport. However, the full containment assessment will be undertaken at a later stage in the process, at that point therefore our initial evaluation will be updated.</p> <p>Further assessments will be conducted to consider if combining routes means that our initial assessment remains extant.</p>

## 4.14 Design Principle Criteria - Alternatives

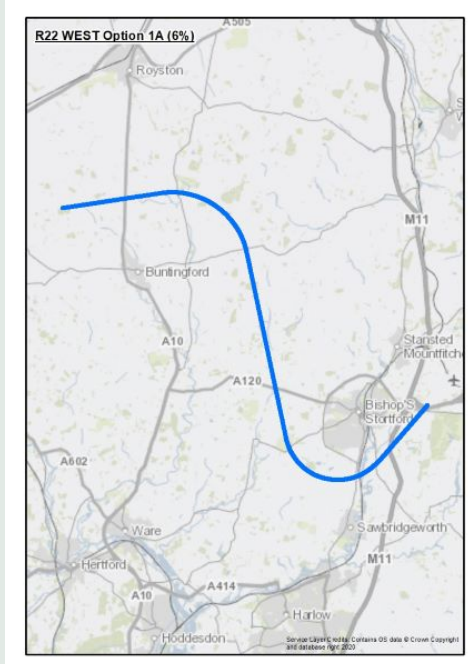
<p><b>Design Principle</b></p> <p style="font-size: 2em; font-weight: bold; text-align: center;">A</p>	<p>Alternatives</p> <p>Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>		
	<p><b>Not met</b></p> <p>N/A</p>	<p><b>Partial</b></p> <p>N/A</p>	<p><b>Met</b></p> <p>This option will be accessible to all aircraft types or a suitable alternative at a lower climb gradient is available.</p>
<p><b>Evaluation assessment summary</b></p>	<p>We have conducted a fleet equipage survey that has provided evidence on the types of routes that aircraft operating from Stansted can fly. In addition, it has provided similar evidence on climb and descent performance, and we have taken both factors into account in our designs so that the majority of aircraft will be able to fly the new routes.</p> <p>However, in any change we recognise that there will be exceptions caused by factors such as the age and navigation equipage of the aircraft or the thrust performance of its engines. For these aircraft we need to create alternative options, which may be in the form of a different route assigned or the use of ATC vectoring procedures, or a combination of both. In creating these alternative options, we will seek to minimise the environmental impacts, and by this we mean either noise or fuel burn/CO<sub>2</sub> emissions.</p> <p>In practice this means that the alternative routes may have a different climb or descent gradient that better suits these aircraft, or that instead of using satellite based PBN routes, the aircraft are directed by ATC. In creating these routes or procedures we will analyse the environmental impact of these in relation to noise and fuel burn.</p> <p>Whilst this design principle might be interpreted to refer to that very small proportion of traffic that cannot achieve basic RNAV, we believe that these are likely to rapidly diminish so that there is no such traffic, post VOR turn-off. We therefore consider that – looking forward - this Design Principle relates more specifically to achievable climb gradients.</p> <p>At this early (Step 2A) stage, we do not believe it's possible to assess our individual design options meaningfully against this design principle - this will only become possible when we have grouped our design options into dependent networks at Step 2B. Therefore, we will not exclude any design option at this stage, on the basis of the 'Alternatives' design principle – all will pass and the issue will be considered more fully as part of our Initial Options Assessment.</p>		

# 5 Standard Instrument Departures Evaluation

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# 6 SID RW 22 WEST

## 6.1 SID RW 22 WEST Option 1A (6%)

Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 1A (6%)	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 1A is provided as an <b>RNAV1</b> replication of the current conventional departure to UTAVA and uses fly-by waypoints to create an approximate replication of the existing published conventional UTAVA departure with a climb gradient of 6%.</p> <p>As a replicated route, it follows a similar track over the ground as current published route and connects to the NATS network at the existing UTAVA fix.</p> <p>However, because it does not route on a direct track to UTAVA after the first turn it does not maximise fuel efficiency. In addition, it terminates on a westerly heading meaning that it does not align with the en-route structure, which routes to the north west.</p> <p>This is the 'do minimum' for SID RW 22 WEST A Options.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1A is a 'do minimum' option for this envelope and has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

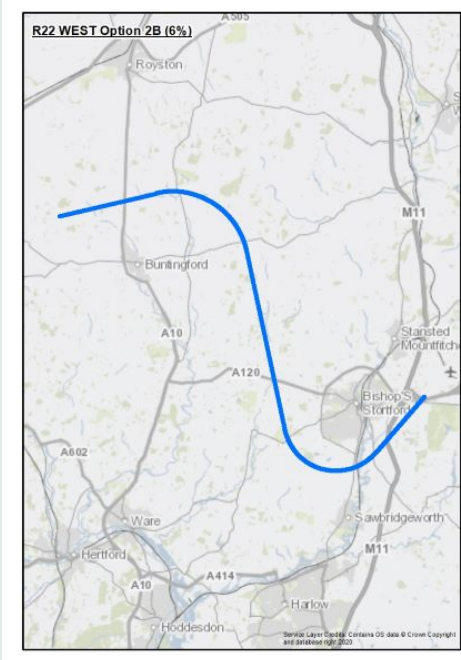


<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1A, a 'do minimum' option for this envelope, is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1A. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1A is a 'do minimum' option for this envelope and so will not overfly any new areas. Assessed in isolation, it supports CDO/CDA operations.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This design option is designed as RNAV1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1A is a 'do minimum' option for this envelope and overflies 1,445 existing households, which equates to an approximate population of 3,700.</p> <p>Taking account of proposed future development, this impact is not expected to increase.</p> <p>This route aims to avoid Sawbridgeworth, which lies immediately ahead of the first turn after take off and Bishops Stortford / Much Hadham within and after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider the design principle to be met.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1A (a 'do minimum' option for this envelope) overflies a total of 16 noise sensitive receptors.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-</p>	NOT MET	PARTIAL	MET

based priorities, which emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1A, a 'do minimum' option for this envelope, currently overflies a population of approximately 3700 people and 8 noise sensitive buildings.</p> <p>The estimated track length is 39km (21Nm).</p> <p>Option 1A overflies a total of 16 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1A is a 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider the DP to be met.</p>			

## 6.2 SID RW 22 WEST Option 2B (6%)

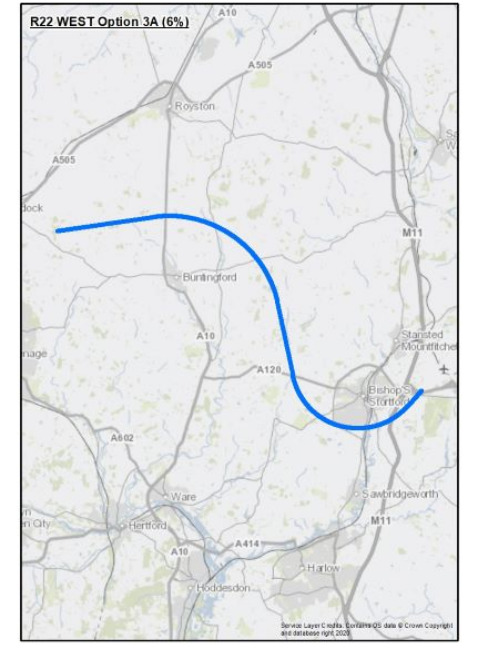
Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 2B (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 2B is provided as an RNAV1 replication of the current conventional departure to NUGBO and uses fly-by waypoints to create an approximate replication of the existing published conventional NUGBO departure with a climb gradient of 6%.</p> <p>As a replicated route it follows a similar track over the ground as the current published route and connects to the NATS network at the existing NUGBO fix.</p> <p>However, because it does not route on a direct track to NUGBO after the first turn, it does not maximise fuel efficiency.</p> <p>This is the 'do minimum' for SID RW 22 WEST B Options</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2B is a 'do minimum' option for this envelope and has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 2B, the 'do minimum' option for this envelope, is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, NUGBO.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2B. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2B is a 'do minimum' option for this envelope and so will not overfly any new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>The design option is designed as RNAV 1 and is flyable. Provides for a Continuous climb.</p>			

<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2B is a 'do minimum' option for this envelope and overflies 1285 existing households, which equates to an approximate population of 3300.</p> <p>Taking account of proposed future development, this impact is not expected to increase.</p> <p>This route aims to avoid Sawbridgeworth straight ahead and Bishops Stortford / Much Hadham within and after the first turn.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2B (a 'do minimum' option for this envelope) overflies a total of 16 noise sensitive receptors.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2B, a 'do minimum' option for this envelope, currently overflies a population of approximately 3300 people and 8 noise sensitive buildings.</p> <p>The estimated track length is 40km (22Nm).</p> <p>Option 2B overflies a total of 16 noise sensitive receptors and 0 proposed dwelling(s).</p>			

<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2B is a 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

### 6.3 SID RW 22 WEST Option 3A (6%)

Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 3A (6%)		REJECT	
<p><i>Option Description:</i></p> <p>Option 3A is provided as an <b>RNP1</b> replication with RF turns at 6% to create an approximate replication of the existing published conventional UTAVA departure.</p> <p>As a replicated route it follows a similar track over the ground as the current published route and connects to the NATS network at the existing UTAVA fix.</p> <p>However, because it does not route on a direct track to UTAVA after the first turn, it does not maximise fuel efficiency. In addition, it terminates on a westerly heading meaning that it does not align with the en-route structure, which routes to the north west.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3A has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

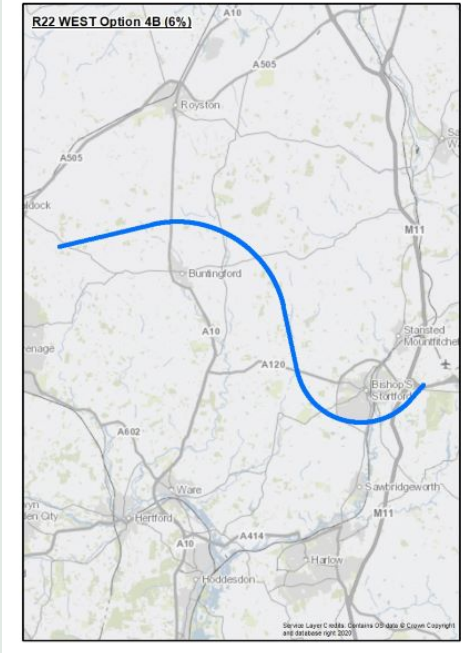


<p>Option 3A is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA .</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3A. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3A will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies approximately the same number of noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

The route is designed as RNP1 SID with RF (Radius to Fix) turns and it is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3A overflies 1945 existing households, which equates to an approximate population of 5000. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2495 households and an approximate population of 6400. Whilst the route attempts to replicate an existing conventional procedure, both turns deviate slightly from the current track and therefore it does not exactly follow the existing NPR.</p> <p>The route aims to avoid Sawbridgeworth straight ahead and Bishops Stortford / Much Hadham within and after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3A overflies a total of 16 noise sensitive receptors.</p> <p>This is approximately the same number as the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-	NOT MET	PARTIAL	MET

based priorities, which emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3A currently overflies a population of approximately 5000 people and 10 noise sensitive buildings.</p> <p>The estimated track length is 36km (19Nm).</p> <p>Option 3A overflies a total of 16 noise sensitive receptors and 550 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3A is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.4 SID RW 22 WEST Option 4B (6%)

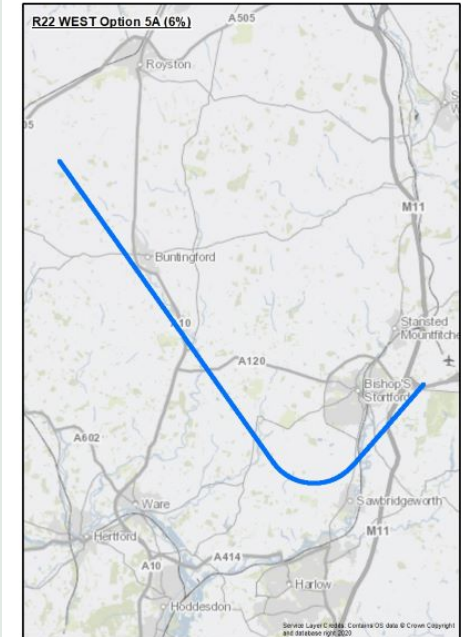
Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 4B (6%)		REJECT	
<p><i>Option Description:</i></p> <p>Option 4B is an RNP1 replication with RF turns at 6% to create an approximate replication of the existing published conventional NUGBO SID.</p> <p>As a replicated route it follows a similar track over the ground as the current published route and connects to the NATS network at the existing NUGBO fix.</p> <p>However, because it does not route on a direct track to NUGBO after the first turn, it does not maximise fuel efficiency.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 4B is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, NUGBO.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4B. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4B will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>The route is designed as RNP1 SID with RF (Radius to Fix) turns and it is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4B overflies 1855 existing households, which equates to an approximate population of 4800. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2405 households and an approximate population of 6200.</p> <p>Whilst the route tries to replicate an existing conventional procedure, the first turn deviates slightly from the current track and therefore it does not follow the existing NPR exactly. This route aims to avoid Sawbridgeworth straight ahead and Bishops Stortford / Much Hadham within and after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4B overflies a total of 14 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will</p>	NOT MET	PARTIAL	MET

take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4B currently overflies a population of approximately 4800 people and 8 noise sensitive buildings.</p> <p>The estimated track length is 36km (19Nm).</p> <p>Option 4B overflies a total of 14 noise sensitive receptors and 550 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.5 SID RW 22 WEST Option 5A (6%)

Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 5A (6%)		REJECT	
<p><i>Option Description:</i></p> <p>Option 5A is an RNAV1 departure featuring a fly-by turn which routes a direct track towards UTAVA. After the first turn it provides a fuel-efficient direct track to the north west by eliminating the turns in the replicated routes.</p> <p>It has a delayed initial turn when compared to the existing departure profile, and this ensures that aircraft do not turn overhead Bishop's Stortford and the track then routes to the west of Buntingford.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5A has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

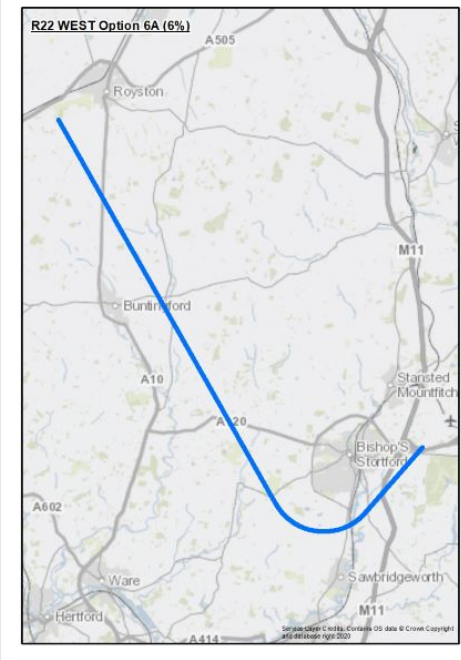


<p>Option 5A is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5A. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5A will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This design option is designed as RNAV1, is deemed flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5A overflies 5691 existing households, which equates to an approximate population of 13900. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 6341 households and an approximate population of 15600.</p> <p>The route aims to avoid Sawbridgeworth straight ahead and Bishops Stortford within the first turn. Overflies Perry Green and Much Hadham after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 5A overflies a total of 18 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p> <p>This design option overflies St Elizabeth's Home (514949N 0000523E – site providing care indicated in AD2.21 para 10) at an altitude of approximately 4,000 feet.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p>Summary of Qualitative Assessment:</p> <p>Option 5A currently overflies a population of approximately 13900 people and 14 noise sensitive buildings.</p> <p>The estimated track length is 37km (20Nm).</p> <p>Option 5A overflies a total of 18 noise sensitive receptors and 650 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5A is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.6 SID RW 22 WEST Option 6A (6%)

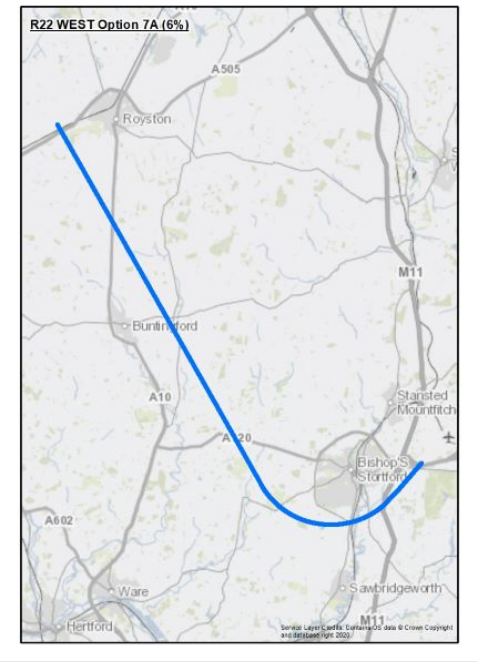
Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 6A (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 6A is an RNAV1 option and utilises a fly-by waypoint to turn closer to the DER to create a direct departure route through the centre of the envelope to 7,000ft whilst eliminating the turns of the replicated routes.</p> <p>It has a similar initial turn to Option 1A but on reaching a point west abeam Bishop's Stortford, it turns on to a north-westerly track, routing direct to a point to the north of UTAVA.</p> <p>This option routes to the east of Buntingford, and to the west of Royston, and aims to avoid flying close to areas such as Sawbridgeworth, Bishop's Stortford and Much Hadham within the first turn.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6A has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 6A is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA .</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 6A. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6A will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

SID is anticipated to be RNAV1 route and is deemed flyable. Provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6A overflies 1135 existing households, which equates to an approximate population of 2900. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1385 households and an approximate population of 3500.</p> <p>The route aims to avoid Sawbridgeworth straight ahead and Bishop's Stortford and Much Hadham within and after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 6A overflies a total of 13 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6A currently overflies a population of approximately 2900 people and 9 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 6A overflies a total of 13 noise sensitive receptors and 250 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 6A is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.8 SID RW 22 WEST Option 7A (6%)

Design Principle Evaluation				
Option Name: SID RW 22 WEST Option 7A		ACCEPT		
<p><i>Option Description:</i></p> <p>Option 7A is similar to Option 6A, but it has been designed to RNP1 using RF turns and therefore more accurate technology. As with Option 6A it routes through the centre of the envelope to 7,000ft whilst eliminating the turns of the replicated routes.</p> <p>The initial turn routes between the tracks of the initial turns of Option 1A and Option 3A and routes on a north westerly track direct to a point to the north of UTAVA.</p> <p>This option also routes to the east of Buntingford, and to the west of Royston, and aims to avoid flying close to areas such as Sawbridgeworth, Bishop's Stortford and Much Hadham within the first turn.</p>				
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET	
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7A has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>				
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET	
<p><i>Summary of Qualitative Assessment:</i></p>				

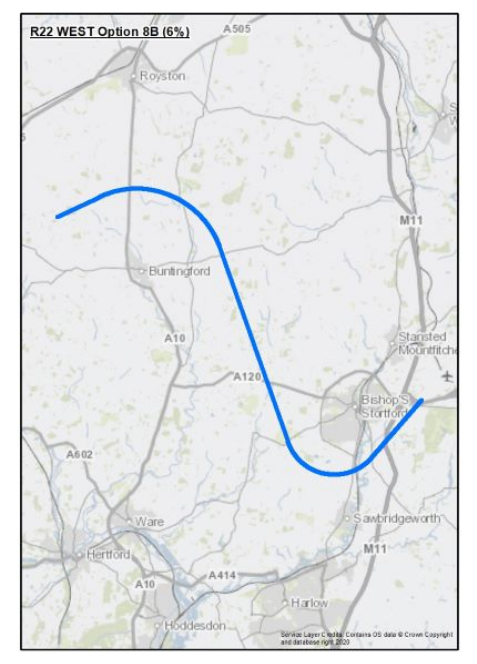


<p>Option 7A is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 7A. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7A will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This design option has been designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7A overflies 972 existing households, which equates to an approximate population of 2400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1322 households and an approximate population of 3300.</p> <p>The route aims to avoid Sawbridgeworth straight ahead and Bishop's Stortford and Much Hadham within and after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 7A overflies a total of 13 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-</p>	NOT MET	PARTIAL	MET

based priorities, which emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7A currently overflies a population of approximately 2400 people and 9 noise sensitive buildings.</p> <p>The estimated track length is 37km (20Nm).</p> <p>Option 7A overflies a total of 13 noise sensitive receptors and 350 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 7A is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.9 SID RW 22 WEST Option 8B (6%)

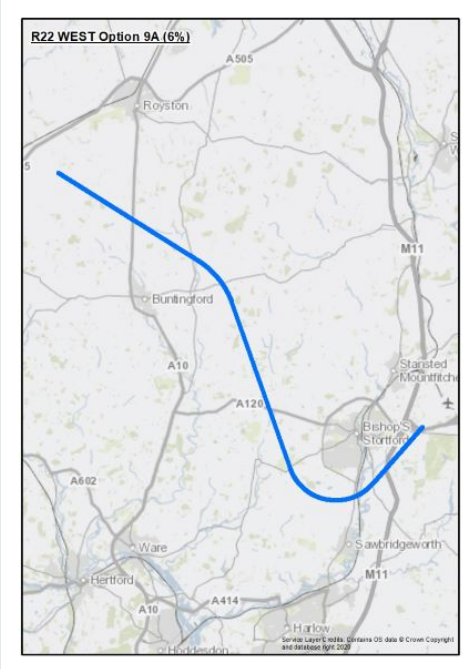
Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 8B	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 8B is an RNAV1 route that utilises fly-by waypoints to create a route that tracks slightly further north to reduce possible interaction with LTN traffic. It may permit noise relief if combined with Option 11B.</p> <p>The initial turn is similar to Option 2B, and close to the existing departure track, but then the route turns more northerly before taking a westerly track toward NUGBO. Whilst not as direct as some of the options included within this envelope, this option is slightly more direct than the replication option.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 8B is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, NUGBO.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 8B. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8B will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This design option has been designed as RNAV1, is deemed flyable and provides for a Continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8B overflies 1250 existing households, which equates to an approximate population of 3200. This is less than the 'do minimum' option.</p> <p>This option does not fly over any proposed developments. The route aims to avoid Sawbridgeworth straight ahead and Bishops Stortford / Much Hadham within and after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 8B overflies a total of 10 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 8B currently overflies a population of approximately 3200 people and 6 noise sensitive buildings.</p> <p>The estimated track length is 40km (22Nm).</p> <p>Option 8B overflies a total of 10 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 8B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.10 SID RW 22 WEST Option 9A (6%)

Design Principle Evaluation				
Option Name: SID RW 22 WEST Option 9A (6%)		ACCEPT		
<p><i>Option Description:</i></p> <p>Option 9A is an RNAV1 departure featuring fly-by turns and a slightly more direct track to a point north of UTAVA by eliminating the turns of the replicated routes, whilst allowing for a north-westerly bearing to be established prior to the end point.</p> <p>It is included in the envelope to offer a hybrid design, which provides an earlier split between the UTAVA and NUGBO SIDs to aid noise dispersal and capacity. It has also been designed to avoid the major housing developments and provides a possible noise relief option when combined with Option 5A.</p> <p>This option terminates in the centre of the envelope and avoids overflight of St Elizabeth’s Centre. By providing an earlier split between the two SIDs it has the potential to aid capacity and reduce delays for following flights on WEST B (NUGBO) departure routes.</p>				
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET	
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9A has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>A separate assessment to ascertain any impact on Luton AD6 route may require additional mitigations to be applied.</p>				
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET	

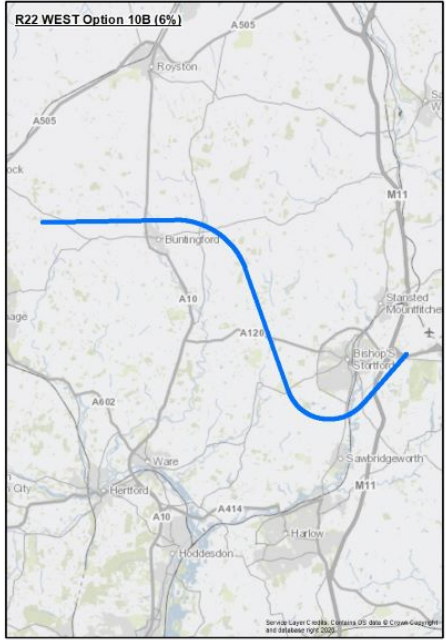


taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9A is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 9A. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9A will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNAV1. is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9A overflies 1191 existing households, which equates to an approximate population of 3100. This is less than the 'do minimum' option.</p> <p>This option does not fly over any proposed developments.</p> <p>The route aims to avoid Sawbridgeworth straight ahead and Bishops Stortford / Much Hadham within and after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 9A overflies a total of 13 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9A currently overflies a population of approximately 3100 people and 10 noise sensitive buildings.</p> <p>The estimated track length is 37km (20Nm).</p> <p>Option 9A overflies a total of 13 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 9A is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.11 SID RW 22 WEST Option 10B (6%)

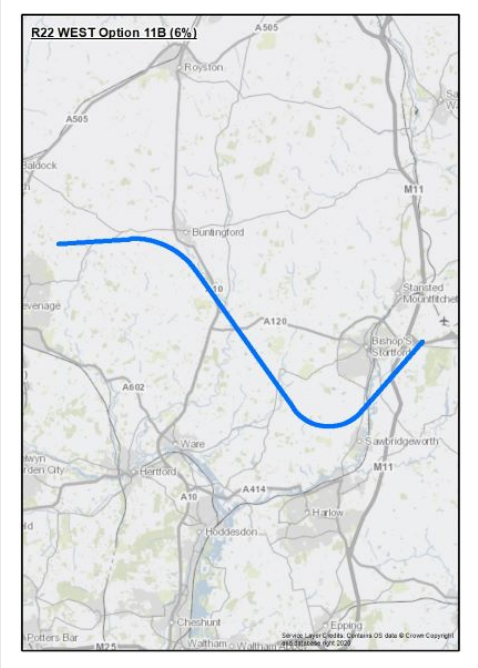
Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 10B (6%)		REJECT	
<p><i>Option Description:</i></p> <p>Option 10B is an RNAV1 departure featuring fly-by turns with a slightly shorter track to NUGBO when compared to the replicated routes.</p> <p>It is included in the envelope to offer a hybrid design, which provides an earlier split between the UTAVA and NUGBO SIDs to aid noise dispersal and capacity. It has also been designed to avoid the major centres of population.</p> <p>This option terminates in the centre of the envelope and avoids overflight of St Elizabeth’s Centre. By providing an earlier split between the two SIDs it has the potential to aid capacity and reduce delays for following flights on WEST B (NUGBO) departure routes.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>A separate assessment to ascertain any impact on Luton AD6 route may require additional mitigations to be applied.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 10B is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 10B. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10B will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNAV1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10B overflies 3068 existing households, which equates to an approximate population of 7600. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 3118 households and an approximate population of 7700.</p> <p>Aims to avoid Sawbridgeworth straight ahead and Bishops Stortford / Much Hadham within and after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 10B overflies a total of 14 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 10B currently overflies a population of approximately 7600 people and 11 noise sensitive buildings.</p> <p>The estimated track length is 37km (20Nm).</p> <p>Option 10B overflies a total of 14 noise sensitive receptors and 50 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 10B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.12 SID RW 22 WEST Option 11B (6%)

Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 11B (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 11B is an RNAV1 departure utilising fly-by waypoints, which seeks to create the shortest (most fuel efficient) route and avoids centres of population. It has been designed to offer possible noise relief when combined with options 2b, 4B or 8B.</p> <p>It has a delayed initial turn when compared to the existing departure profile, and this ensures that aircraft do not turn overhead Bishop's Stortford and the track then routes to the west of the envelope. Once the aircraft reaches a point south abeam Buntingford, the route turns left on a westerly track towards the north of Stevenage and the south of the envelope.</p> <p>This option avoids overflight of population centres and reduces the number of track miles flown when compared to the current SID.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 11B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

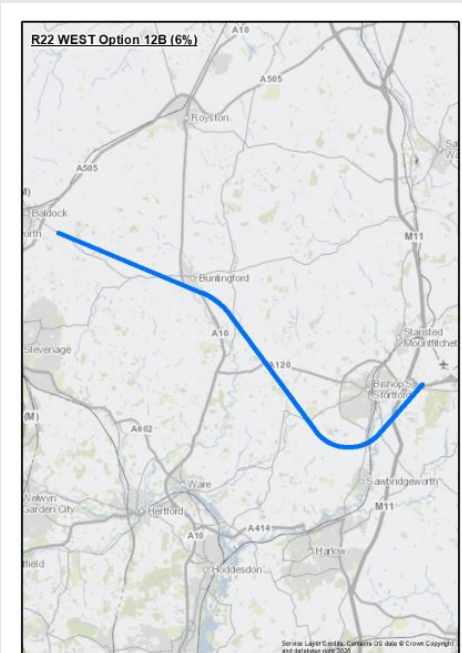


taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 11B is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, NUGBO.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 11B. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 11B will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies approximately the same number of noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option is designed as RNAV1, is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 11B overflies 4556 existing households, which equates to an approximate population of 11400. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 5756 households and an approximate population of 14400.</p> <p>Aims to avoid Sawbridgeworth straight ahead and Bishops Stortford / Much Hadham within and after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 11B overflies a total of 16 noise sensitive receptors.</p> <p>This is approximately the same number as the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's	NOT MET	PARTIAL	MET

altitude-based priorities, which emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 11B currently overflies a population of approximately 11400 people and 13 noise sensitive buildings.</p> <p>The estimated track length is 35km (19Nm).</p> <p>Option 11B overflies a total of 16 noise sensitive receptors and 1200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 11B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.13 SID RW 22 WEST Option 12B (6%)

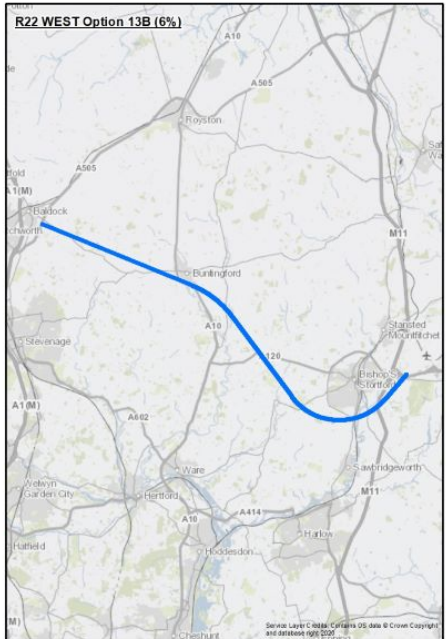
Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 12B (6%)		REJECT	
<p><i>Option Description:</i></p> <p>Option 12B is an RNAV1 departure utilising fly-by waypoints.</p> <p>The initial turn takes place after Bishops Stortford and then routes through the centre of the envelope on a north westerly track. It then turns onto a north-westerly track at Buntingford towards Letchworth and the northern edge of the envelope to reduce possible interaction with LTN traffic.</p> <p>This option is included as it reduces the number of track miles flown when compared to the current SID.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 12B is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, NUGBO.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 12B. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12B will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route is designed as RNAV1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12B overflies 4203 existing households, which equates to an approximate population of 10300. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 5203 households and an approximate population of 12800.</p> <p>It aims to avoid Sawbridgeworth straight ahead and Bishops Stortford within and after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 12B overflies a total of 14 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which</p>	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12B currently overflies a population of approximately 10300 people and 12 noise sensitive buildings.</p> <p>The estimated track length is 35km (19Nm).</p> <p>Option 12B overflies a total of 14 noise sensitive receptors and 1000 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 12B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.14 SID RW 22 WEST Option 13B (6%)

Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 13B (6%)		REJECT	
<p><i>Option Description:</i></p> <p>Option 13B is an RNP1 departure using RF turns and therefore more accurate technology.</p> <p>The initial turn takes place after Bishops Stortford and then routes through the centre of the envelope on a north westerly track. It then turns onto a north-westerly track at Buntingford towards Letchworth and the northern edge of the envelope to reduce possible interaction with LTN traffic.</p> <p>This option is included as it reduces the number of track miles flown when compared to the current SID.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

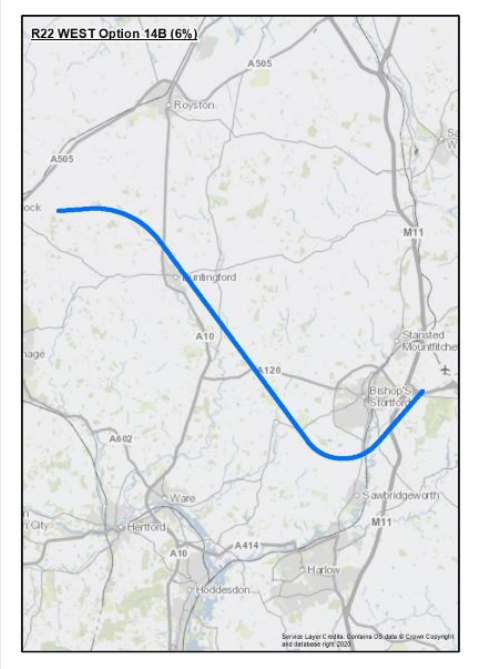


<p>Option 13B is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, NUGBO.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 13B. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13B will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i> This option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13B overflies 8129 existing households, which equates to an approximate population of 19300. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 10079 households and an approximate population of 23900.</p> <p>The route aims to avoid Bishops Stortford within and after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 13B overflies a total of 31 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13B currently overflies a population of approximately 19300 people and 29 noise sensitive buildings.</p> <p>The estimated track length is 34km (18Nm).</p> <p>Option 13B overflies a total of 31 noise sensitive receptors and 1950 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 13B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.15 SID RW 22 WEST Option 14B (6%)

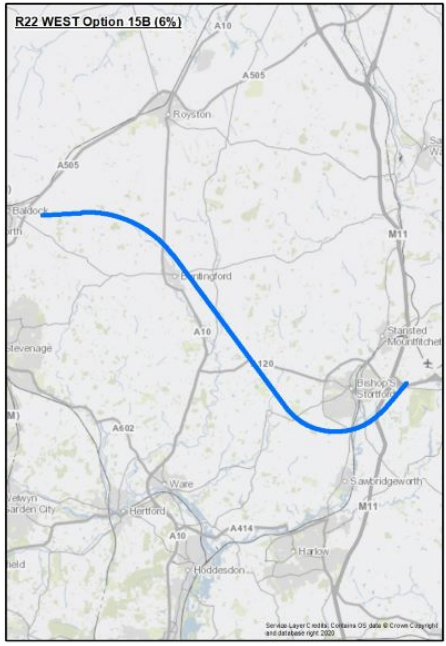
Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 14B (6%)		REJECT	
<p><i>Option Description:</i></p> <p>Option 14B is an <b>RNAV1</b> departure utilising fly-by waypoints as an alternative to Option 12B.</p> <p>The initial turn takes place after Bishops Stortford and then routes through the centre of the envelope on a north westerly track until well north of Buntingford, where it turns on a westerly track towards Letchworth. It routes to the north of Stevenage and terminates at the northern edge of the envelope to reduce possible interaction with LTN traffic.</p> <p>This option reduces the number of track miles flown when compared to the current SID.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 14B is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, NUGBO.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 14B. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14B will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNAV1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14B overflies 4094 existing households, which equates to an approximate population of 10100. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 4594 households and an approximate population of 11400.</p> <p>This route aims to avoid Bishops Stortford within and after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 14B overflies a total of 11 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14B currently overflies a population of approximately 10100 people and 8 noise sensitive buildings.</p> <p>The estimated track length is 37km (20Nm).</p> <p>Option 14B overflies a total of 11 noise sensitive receptors and 500 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 14B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.16 SID RW 22 WEST Option 15B (6%)

Design Principle Evaluation			
Option Name: SID RW 22 WEST Option 15B (6%)		REJECT	
<p><i>Option Description:</i></p> <p>Option 15B is an RNP1 departure using RF turns and therefore utilising the more accurate technology,</p> <p>The initial turn takes place after Bishops Stortford and then routes through the centre of the envelope on a north westerly track until well north of Buntingford, where it turns on a westerly track towards Letchworth. It routes to the north of Stevenage and terminates at the northern edge of the envelope to reduce possible interaction with LTN traffic.</p> <p>This option is included reduces the number of track miles flown when compared to the current SID.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 15B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>Option 15B is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, NUGBO.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 15B. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 15B will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNAV1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 15B overflies 4365 existing households, which equates to an approximate population of 10600. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 5665 households and an approximate population of 13700.</p> <p>This route aims to avoid Bishops Stortford within and after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 15B overflies a total of 12 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which</p>	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 15B currently overflies a population of approximately 10600 people and 9 noise sensitive buildings.</p> <p>The estimated track length is 36km (19Nm).</p> <p>Option 15B overflies a total of 12 noise sensitive receptors and 1300 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 15B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 6.17 SID RW 22 WEST - Viable but Poor Fit Options

Option	Safety	Policy	Demand	Outcome
<b>A16 Left Wraparound West A</b>	S	P	D	'Viable but poor fit'
<p>After departure from RWY 22, aircraft would make a 270° left-hand turn, fully around the airport, and then begin heading North West through the envelope.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				
<b>B17 Right Wraparound West A</b>	S	P	D	'Viable but poor fit'
<p>After departure from RWY 22, aircraft would make a 450° right-hand turn, flying fully around the airport, and then begin heading north west.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				

<p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				
<b>C18 Extended straight ahead then North West A</b>	S	P	D	'Viable but poor fit'
<p>After departure from RWY 22, aircraft would continue straight ahead for longer and then make a right-hand turn back towards the West A design envelope in a track that ventures outside the existing design envelope.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p>It must also be noted that this option may extend beyond the design envelope.</p>				
<b>D19 Left Wraparound West B</b>	S	P	D	'Viable but poor fit'
<p>After departure from RWY 22, aircraft would make a 270° left-hand turn, fully around the airport, and then begin heading west towards the Letterbox.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				
<b>E20 Right Wraparound West B</b>	S	P	D	'Viable but poor fit'
<p>After departure from RWY 22, aircraft would make a 450° right-hand turn, around the airport, and then begin heading west.</p>				

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.

**Demand:** The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.

**F21 Extended straight ahead then North West A**

S

P

D


‘Viable but poor fit’

After departure from RWY 22, aircraft would continue straight ahead for longer and then make a right-hand turn before making another left-hand turn back towards the West B envelope on a track that ventures outside the existing design envelope.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.

# 7 SID RW 22 SOUTH-WEST

## 7.1 SID RW 22 SOUTH WEST Option 1 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 SOUTH WEST Option 1 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option provides an RNAV 1 route, that routes on runway heading directly to the end of the design envelope with an 8% climb gradient. It routes to the northern edge of Harlow and the southern edge of the new development at Gilston but represents the most direct and fuel-efficient option for southbound departures.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is foreseen that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

A separate assessment to ascertain any impact on LHR route may require additional mitigations to be applied.			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Enfield (ENF).</p> <p>Based on current information, there is a potential interaction with Heathrow. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p>			

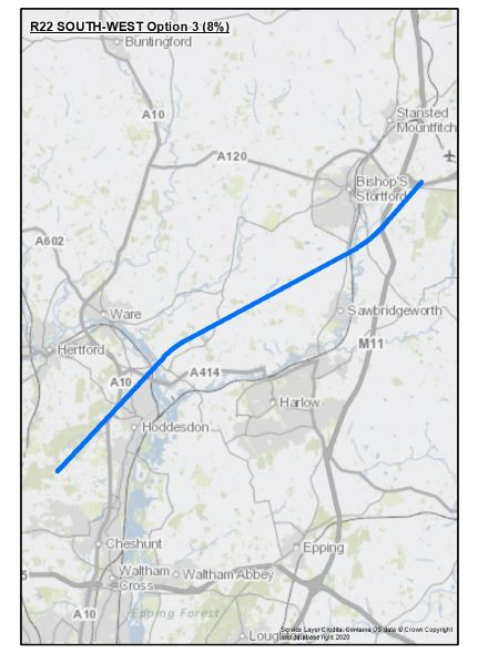


Assessed in isolation, it supports CDO/CDA operations. The track to 7,000ft is shorter than the 'do minimum' option.			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route has been designed as RNAV1 and is flyable. Provides for a Continuous climb at 8% CG.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> Option 1 overflies 22875 existing households, which equates to an approximate population of 55500. This is more than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 28025 households and an approximate population of 68000. There is no existing track within this envelope, as this envelope presents a new route to join the network. The track overflies some new areas, including Sawbridgeworth and Harlow.			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i>			

<p>An initial quantitative assessment has identified that Option 1 overflies a total of 135 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 55500 people and 125 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 1 overflies a total of 135 noise sensitive receptors and 5150 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as</p>			

part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.

## 7.2 SID RW 22 SOUTH WEST Option 3 (8%)

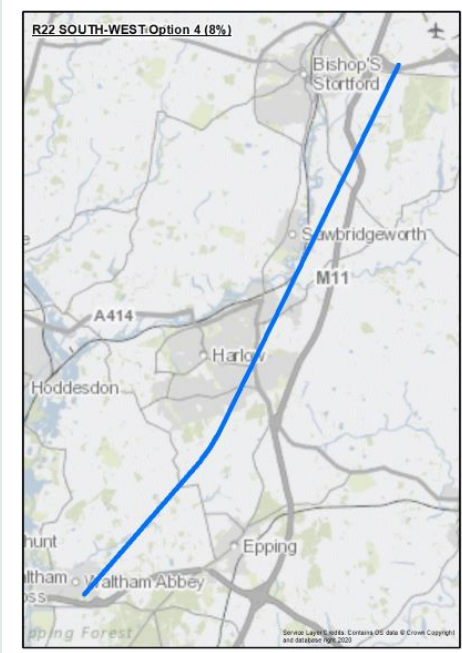
Design Principle Evaluation			
Option Name: SID RW 22 SOUTH WEST Option 3 (8%)			ACCEPT
<p><i>Option Description:</i></p> <p>This is an RNAV 1 route option at 8% that initially routes on runway heading for approximately 3 miles and then diverges to the right towards the northern edge of the design envelope. It then makes a slight left turn to follow parallel the northern edge of the envelope.</p> <p>The track divergence takes place to the south of Bishops Stortford and routes traffic to the north of both the new development at Gilston and Harlow.</p> <p>This represents an amended option following feedback at engagement. The original option 3 had an earlier track divergence which impacted the southern edge of Bishops Stortford. By moving the position of the first turn to a later position, the noise impact from this route is expected to be reduced.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is foreseen that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p> <p>A separate assessment to ascertain any impact on LHR interaction may require additional mitigations to be applied. (A maximum track adjustment of 15 degrees is permitted).</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Enfield (ENF).</p> <p>Based on current information, there is a potential interaction with Heathrow. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route is designed as RNAV1, is deemed flyable and provides for a Continuous climb at 8% CG.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 overflies 11498 existing households, which equates to an approximate population of 28100. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 13348 households and an approximate population of 32600.</p> <p>There is no existing track within this envelope, as this envelope presents a new route to join the network. The track overflies some new areas including Great Amwell and Hoddesdon.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3 overflies a total of 51 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 currently overflies a population of approximately 28100 people and 39 noise sensitive buildings.</p>			

<p>The estimated track length is 30km (16Nm).</p> <p>Option 3 overflies a total of 51 noise sensitive receptors and 1850 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

### 7.3 SID RW 22 SOUTH WEST Option 4 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 SOUTH WEST Option 4 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This is an RNAV 1 route option at 8% that diverges by 15° to the left of the extended runway centreline and maintains a track consistent with the southern edge of the envelope.</p> <p>The track divergence takes place south of Bishops Stortford and routes traffic south of Sawbridgeworth and the centre of Harlow and terminates at the southern edge of the design envelope.</p> <p>By creating an early track divergence, this option may reduce runway delays for following traffic departing on 22 WEST A or WEST B routes.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is foreseen that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports and in particular any impact on LHR interaction may be required to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Enfield (ENF).</p>			

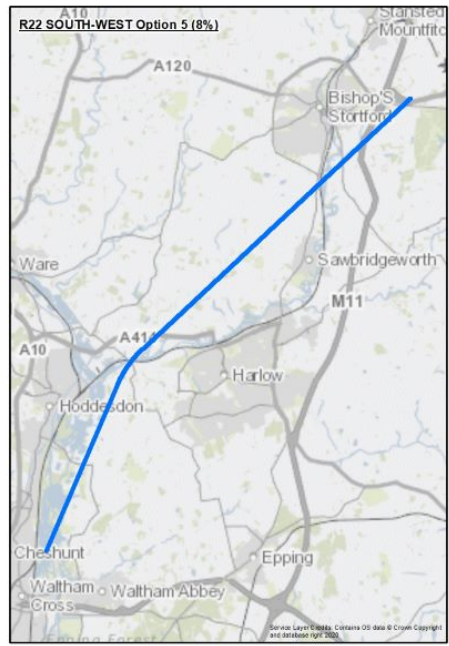


<p>Based on current information, there is a potential interaction with Heathrow. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route has been designed RNAV1, is deemed flyable and provides for a Continuous climb at 8% CG.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 25605 existing households, which equates to an approximate population of 61200. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 31905 households and an approximate population of 76,300.</p> <p>There is no existing track within this envelope, as this envelope presents a new route to join the network. The track overflies some new areas including Sawbridgeworth, Harlow and Cheshunt.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 98 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 61200 people and 87 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 4 overflies a total of 98 noise sensitive receptors and 6300 proposed dwelling(s).</p>			

<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 7.4 SID RW 22 SOUTH WEST Option 5 (8%)

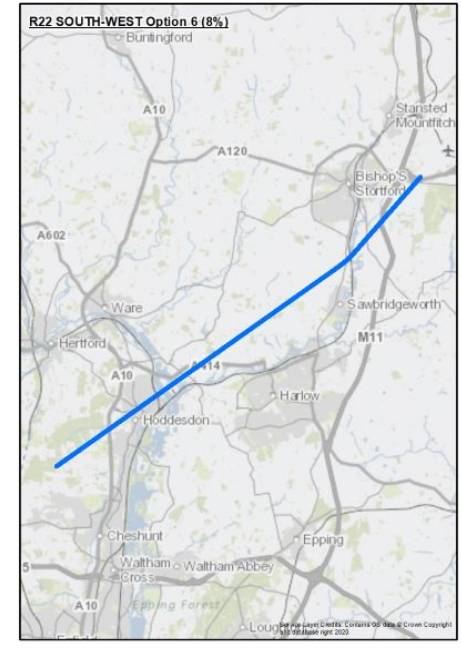
Design Principle Evaluation			
Option Name: SID RW 22 SOUTH WEST – Option 5 (8%)			ACCEPT
<p><i>Option Description:</i></p> <p>This is an RNAV 1 route option at 8% that routes initially on a track slightly to the north of the Option 1, towards Roydon before turning approx. 15° left towards Cheshunt and terminates near the centre of the envelope.</p> <p>This track has been created to reduce noise when compared to Option 1 by avoiding direct overflight of Sawbridgeworth, Harlow and Hoddesdon (although it does overfly the new development at Gilston).</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is foreseen that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports and in particular any impact on LHR interaction may be required to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 5 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Enfield (ENF).</p> <p>Based on current information, there is a potential interaction with Heathrow. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNAV1, is deemed flyable and provides for a Continuous climb at 8% CG			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 overflies 14445 existing households, which equates to an approximate population of 34900. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 18145 households and an approximate population of 43800.</p> <p>There is no existing track within this envelope, as this envelope presents a new route to join the network. The track overflies some new areas, although it aims to avoid direct overflight of Harlow and Hoddesdon.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 5 overflies a total of 49 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 currently overflies a population of approximately 34900 people and 38 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 5 overflies a total of 49 noise sensitive receptors and 3700 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 7.5 SID RW 22 SOUTH WEST Option 6 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 SOUTH WEST – Option 6 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 6 is an RNAV1 route option at 8% that follows the runway track after departure as per Option 1, then turns right to route to the north of Sawbridgeworth and Harlow, before taking up a direct track towards the northern end of the envelope.</p> <p>This track has been created to reduce noise when compared to Option 1 by avoiding direct overflight of Sawbridgeworth and Harlow.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is foreseen that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports and in particular any impact on LHR interaction may be required to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>Option 6 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Enfield (ENF).</p> <p>Based on current information, there is a potential interaction with Heathrow. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 6. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 will overfly some new areas.</p> <p>This option overflies more households and population than the ‘do minimum’ option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the ‘do minimum’ option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the ‘do minimum’ option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNAV1, is deemed flyable and provides for a Continuous climb at 8% CG			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 overflies 12951 existing households, which equates to an approximate population of 31900. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 15901 households and an approximate population of 39200.</p> <p>There is no existing track to compare with in this envelope, as this envelope presents a new route to join the network. The track overflies some new areas although it aims to avoid direct overflight of Harlow before turning towards the end of the envelope.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 6 overflies a total of 56 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 currently overflies a population of approximately 31900 people and 43 noise sensitive buildings.</p> <p>The estimated track length is 31km (17Nm).</p> <p>Option 6 overflies a total of 56 noise sensitive receptors and 2950 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 6 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

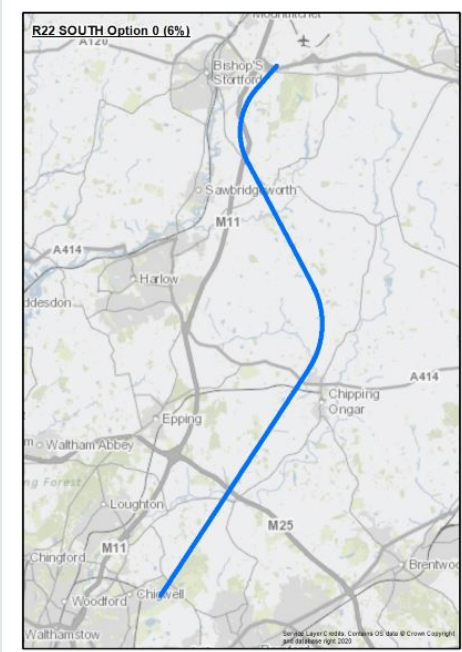
## 7.6 SID RW 22 SOUTH-WEST - Viable but Poor Fit Options

Option	Safety	Policy	Demand	Outcome
<b>A2 10% Climb or above.</b>	S	P	D	Viable but Poor Fit
<p>This option was included with the same lateral track as Option 1 but with a 10% climb gradient.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is change that facilitates the greatest possible access to all users. Evidence from the airline fleet survey demonstrated that only 50% of airlines could fly this gradient, and on this basis this option would not comply with this initiative (and therefore the Policy DP) as the climb gradient would limit the use of this SID.</p>				
<b>B7 Left Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a left-hand turn, fly around the airport, and then begin heading Southwest towards the end of the design envelope.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				
<b>C8 Right Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a right-hand turn, fly around the airport, and then begin heading Southwest towards the end of the design envelope.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic</p>				

<p>and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p>It could not be determined whether this option is unviable due to turn radius and Minimum Stabilisation Distance (MSD), further work would be required to determine this.</p>				
<b>D9 Straight then Right and Left</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would continue flying straight ahead until they reach Harlow, at which point they would make a right turn followed by an immediate left turn to resume a south-westerly track towards the end of the design envelope.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns as it may involve conducting turns that are unlikely to be compliant with PANS-OPS. As a result this option would not comply with the Safety DP.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p>At this stage, it cannot be determined whether this option complies with the MSD within PANS-OPS, if not, it could be deemed unviable.</p>				
<b>E10 Left of Centre and outside Envelope</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a slight left turn and then continue flying straight ahead towards Harlow before making a larger left-hand turn in a south-easterly direction, outside this design envelope.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it it would overfly a densely populated area (Harlow), having a significant noise impact.</p> <p>A lower impact version of this option is already included within the RWY 22 South envelope as Option 5.</p>				

# 8 SID RW 22 SOUTH

## 8.1 SID RW 22 SOUTH Option 0 (6%)

Design Principle Evaluation			
Option Name: SID RW 22 SOUTH Option 0 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 0 is provided as an RNAV1 replication of the current LAM3R SID, and uses Fly-by Waypoints to create an approximate replication of the existing published conventional LAM3R departure with a climb gradient of 6%.</p> <p>As a replicated route it follows a similar track over the ground as the current published route and connects to the NATS network at the existing LAM fix.</p> <p>In addition, as the track seeks to replicate a current procedure it is within the existing NPRs. However, since it replicates the currently published track, it does not present the most efficient route to LAM.</p> <p>This is the 'do minimum' for SID RW 22 SOUTH Options.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation</p>	NOT MET	PARTIAL	MET

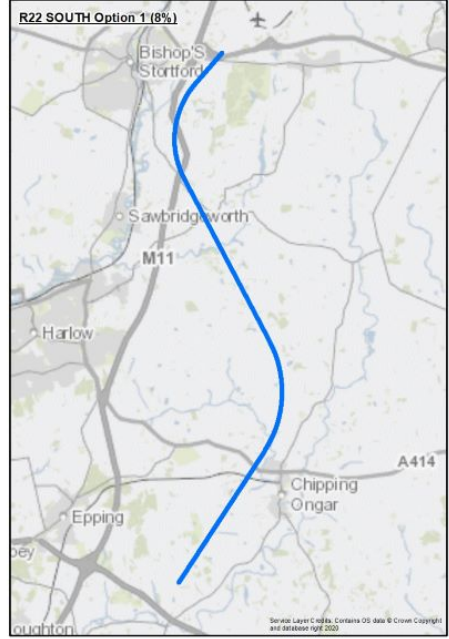
Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 0. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and so will not overfly any new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This option is designed as RNAV1, is flyable and provides for a Continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and overflies 11938 existing households, which equates to an approximate population of 29400.</p> <p>Taking account of proposed future development, this impact increases to approximately 12338 households and an approximate population of 30400.</p> <p>It aims to avoid Sawbridgeworth straight ahead and Matching, Moreton and North Weald Basset along the departure.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 0 (the 'do minimum' option for this envelope) overflies a total of 45 noise sensitive receptors.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 , the 'do minimum' option for this envelope, currently overflies a population of approximately 29400 people and 41 noise sensitive buildings.</p> <p>The estimated track length is 35km (19Nm).</p> <p>Option 0 overflies a total of 45 noise sensitive receptors and 400 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 0 is the 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 8.2 SID RW 22 SOUTH Option 1 (8%)

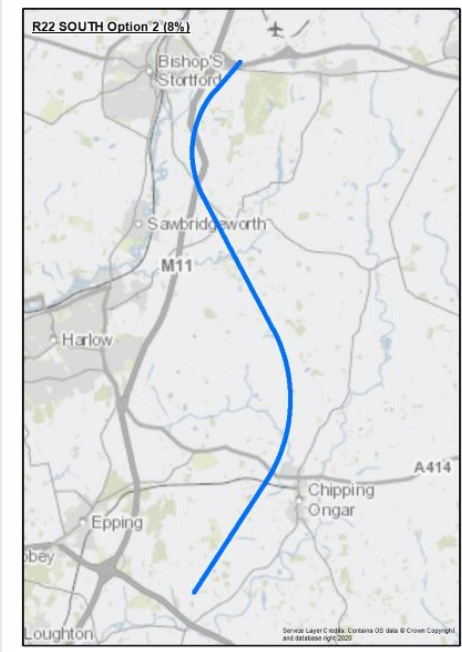
Design Principle Evaluation			
Option Name: SID RW 22 SOUTH Option 1 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 1 is provided as an RNAV replication of the current LAM3R SID and uses Fly-by Waypoints to create an approximate replication of the existing published conventional LAM3R departure with a climb gradient of 8%.</p> <p>As a replicated route it follows a similar track over the ground as current published route and connects to the NATS network at the existing LAM fix.</p> <p>In addition, as the track seeks to replicate a current procedure it is within the existing NPRs. However, since it replicates the currently published track, it does not present the most fuel-efficient route to LAM.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 1 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNAV1, is flyable and provides for a Continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 2943 existing households, which equates to an approximate population of 7400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 3543 households and an approximate population of 8800. It aims to avoid Sawbridgeworth straight ahead and Matching, Moreton and North Weald Basset along the departure.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 20 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 7400 people and 19 noise sensitive buildings.</p> <p>The estimated track length is 32km (17Nm).</p> <p>Option 1 overflies a total of 20 noise sensitive receptors and 600 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

### 8.3 SID RW 22 SOUTH Option 2 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 SOUTH Option 2 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 2 is provided as an RNP1 replication of the current LAM3R SID, and uses RF turns to create an approximate replication of the existing published conventional LAM3R departure with a climb gradient of 8%. RNP1 + RF provides a higher degree of accuracy during the turns. As a replicated route it follows a similar track over the ground as current published route and connects to the NATS network at the existing LAM fix.</p> <p>In addition, as the track seeks to replicate a current procedure it is within the existing NPRs. However, since it replicates the currently published track, it does not present the most fuel-efficient route to LAM.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

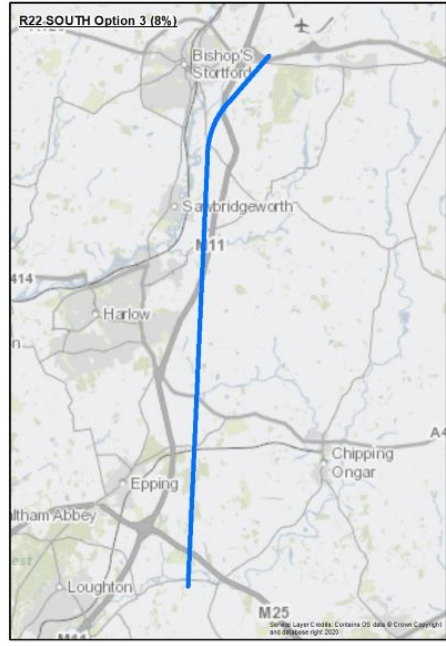
<p>Option 2 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNP1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 overflies 2719 existing households, which equates to an approximate population of 6900. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 3169 households and an approximate population of 8000. The route aims to avoid Sawbridgeworth straight ahead and Matching, Moreton and North Weald Bassett along the departure.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2 overflies a total of 18 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>Option 2 currently overflies a population of approximately 6900 people and 17 noise sensitive buildings.</p> <p>The estimated track length is 32km (17Nm).</p> <p>Option 2 overflies a total of 18 noise sensitive receptors and 450 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 8.4 SID RW 22 SOUTH Option 3 (8%)

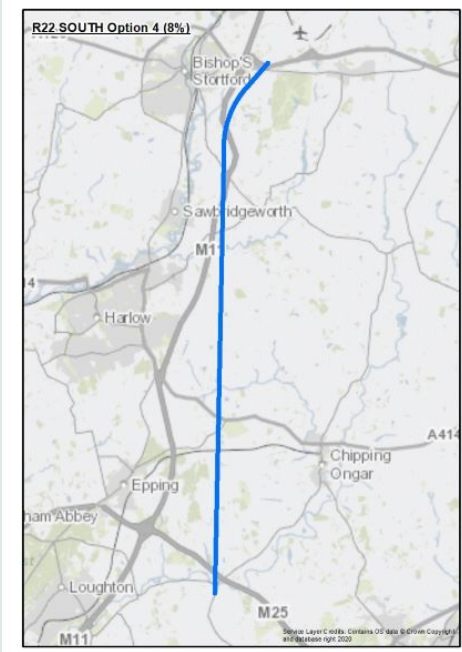
Design Principle Evaluation			
Option Name: SID RW 22 SOUTH Option 3		ACCEPT	
<p><i>Option Description:</i></p> <p><i>Option 3 is an RNAV1 route, which features fly-by waypoints. After the first turn it provides a fuel-efficient direct track to the South by eliminating the turns in the replicated routes.</i></p> <p><i>As per Options 1 and 2, the departure track remains to the east of Bishop's Stortford.</i></p> <p><i>This option is included to provide an alternative option for an RNAV 1 route, routing directly to LAM with an 8% climb gradient. It represents an efficient route for southbound departures and a higher climb gradient aims to ensure compatibility with the network joining point at LAM.</i></p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 3 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNAV1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 overflies 2703 existing households, which equates to an approximate population of 6600. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 6453 households and an approximate population of 15600.</p> <p>This option overflies some new areas, close to Sawbridgeworth and North Weald Bassett.</p> <p>The route aims to avoid Harlow and Epping.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3 overflies a total of 15 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 currently overflies a population of approximately 6600 people and 11 noise sensitive buildings.</p> <p>The estimated track length is 31km (17Nm).</p> <p>Option 3 overflies a total of 15 noise sensitive receptors and 3750 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 8.5 SID RW 22 SOUTH Option 4 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 SOUTH – Option 4 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 4 is an RNP1 with RF option at 8% that straightens onto a more southerly track after the first turn, and routes directly towards the current LAM fix in the centre of the envelope. This provides a more expeditious route and reduces the track miles flown whilst also avoiding overflight of Harlow.</p> <p>This option is included to provide an alternative option for an RNP1 route, that routes directly to LAM.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

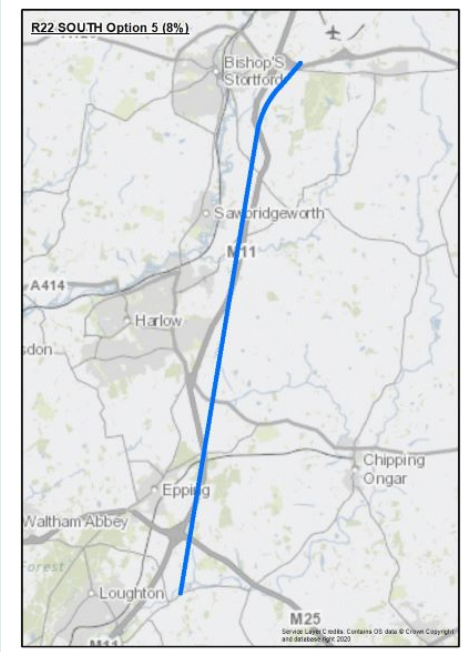
<p>Option 4 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>At this stage, we believe this route option is able to operate independently from the holds and arrival and departure routes of adjacent airports, although this has not been formally assessed. The existing route has restrictions on use (for landing at LHR only), and we will need to understand the in particular the interactions with LHR; further assessment will be required to confirm this. Assessment against new arrival routes at STN has not yet taken place. The route does not require access to airspace belonging to adjacent airports. Further assessment is required to fully determine whether this route option will support the demand requirements of STN.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route option is designed as RNP1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 3092 existing households, which equates to an approximate population of 7600. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 4192 households and an approximate population of 10400.</p> <p>The route aims to avoid overflight of large built-up areas.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 11 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 7600 people and 9 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 4 overflies a total of 11 noise sensitive receptors and 1100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 8.6 SID RW 22 SOUTH Option 5 (8%)

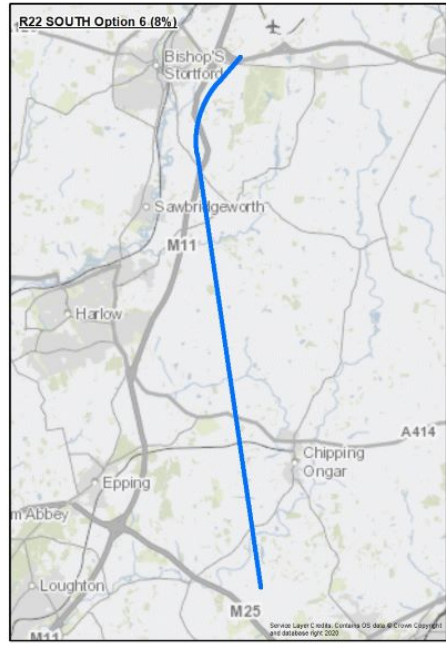
Design Principle Evaluation			
Option Name: SID RW 22 SOUTH – Option 5 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 5 an RNP1 with RF option at 8% that tracks towards the SOUTH letterbox to the west of LAM. This option aims to follow the track of the M11 motorway as far as practicable towards Epping in response to feedback from previous engagement.</p> <p>This also provides a more direct route than Options 1 &amp; 2 to reduce the track miles flown and aims to avoid overflying major population centres.</p> <p>This option is included to provide an alternative option for an RNP1 route, routing directly to a point to the west side of the design envelope and the west of LAM.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 5 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 overflies 4414 existing households, which equates to an approximate population of 10700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 8264 households and an approximate population of 20100. The route aims to avoid overflight of large built-up areas and attempts to follow the M11 motorway.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 5 overflies a total of 20 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 currently overflies a population of approximately 10700 people and 15 noise sensitive buildings.</p> <p>The estimated track length is 31km (17Nm).</p> <p>Option 5 overflies a total of 20 noise sensitive receptors and 3850 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 8.7 SID RW 22 SOUTH Option 6 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 SOUTH – Option 6 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 6 is an RNP1 with RF option at 8% that turns left on to a south-easterly track to the east of Matching Tye, and routes to the eastern edge of the envelope in the vicinity of Greensted Green.</p> <p>It aims to provide a more direct route than the existing SID, whilst also staying as far east as practicable to avoid the overflight of current and planned population centres around Harlow.</p> <p>This option is included to provide an alternative option for an RNP1 route, routing directly to a point to the east of the design envelope and the east of LAM.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>"Option 6 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 6. This option is deemed to take account of the needs of other airspace users."</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNP1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 overflies 1216 existing households, which equates to an approximate population of 3200. This is less than the 'do minimum' option.</p> <p>This option does not fly over any proposed developments.</p> <p>The route aims to avoid overflight of large built-up areas and route directly to a network joining point to the east of LAM.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 6 overflies a total of 6 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>Option 6 currently overflies a population of approximately 3200 people and 4 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 6 overflies a total of 6 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 6 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

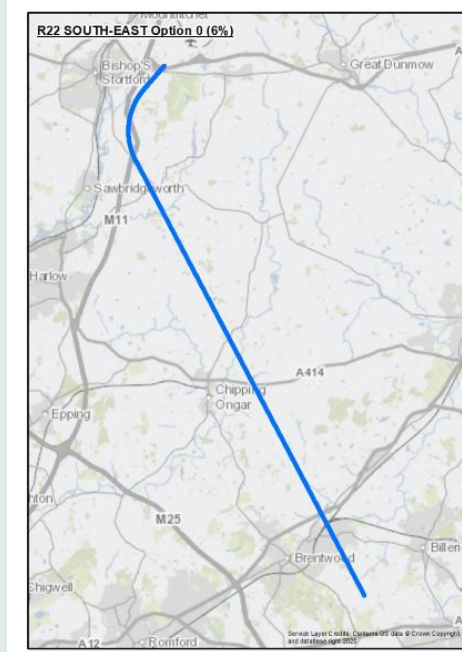
## 8.8 SID RW 22 SOUTH - Viable but Poor Fit Options

Option	Safety	Policy	Demand	Outcome
<b>A7 Right Wraparound</b>	S	P	D	Viable but Poor Fit
<p>A variation to Option 1 which involved aircraft departing Runway 22 and turning right after departure and wrapping 270° around the airport before taking up a heading towards LAM.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with arriving traffic. As a result this option would not comply with the Safety DP.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				
<b>B8 Left Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from Runway 22, aircraft would make a 360° left-hand turn, flying fully around the airport, and then begin heading South towards the Letterbox.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore</p>				

the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.				
<b>C8 Extended straight ahead then left</b>	S	P	D	Viabale but Poor Fit
<p>After departure from RWY 22, aircraft would fly straight ahead and then make a gradual left-hand turn to begin heading South towards the Letterbox.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it it would overfly a densely populated area (Harlow), having a significant noise impact. It may also interact with traffic from other airports (Luton and Heathrow) which is misaligned with the efficiency requirement in the AMS for the most efficient use of airspace.</p>				

# 9 SID RW 22 SOUTH-EAST

## 9.1 SID RW 22 SOUTH-EAST Option 0 (6%)

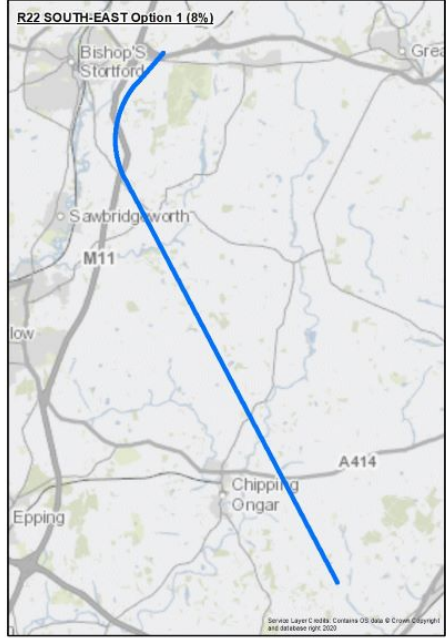
Design Principle Evaluation			
Option Name: SID RW 22 SOUTH-EAST Option 0 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 0 is provided as an RNAV replication of the current DET1R SID. It uses Fly-by Waypoints to create an approximate replication of the existing published conventional DET1R departure with a climb gradient of 6%.</p> <p>As a replicated route it follows a similar track over the ground as current published route and connects to the NATS network in the same area as the existing SID.</p> <p>In addition, as the track seeks to replicate a current procedure it is within the existing NPRs.</p> <p>This is the 'do minimum' for SID RW 22 SOUTH-EAST Options.</p>			
DP <b>S</b> : Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Brentwood.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 0. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and so will not overfly any new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option is designed as RNAV 1, is flyable and provides for a continuous climb.</p>			

DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and overflies 11936 existing households, which equates to an approximate population of 29900.</p> <p>Taking account of proposed future development, this impact is not expected to increase.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 0 (the 'do minimum' option for this envelope) overflies a total of 46 noise sensitive receptors.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, currently overflies a population of approximately 29900 people and 42 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 0 overflies a total of 46 noise sensitive receptors and 0 proposed dwelling(s).</p>			
DP <b>E</b> : We will seek to minimise the amount of controlled airspace that we require, and our future route designs	NOT MET	PARTIAL	MET

<p>should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 0 is the 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 9.2 SID RW 22 SOUTH-EAST Option 1 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 SOUTH-EAST Option 1 (8%)	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 1 is provided as an RNAV replication of the current DET1R SID and uses Fly-by Waypoints to create an approximate replication of the existing published conventional DET1R departure with a climb gradient of 8%.</p> <p>As a replicated route it follows a similar track over the ground as current published route and connects to the NATS network in the same area as the existing SID.</p> <p>In addition, as the track seeks to replicate a current procedure it is within the existing NPRs.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

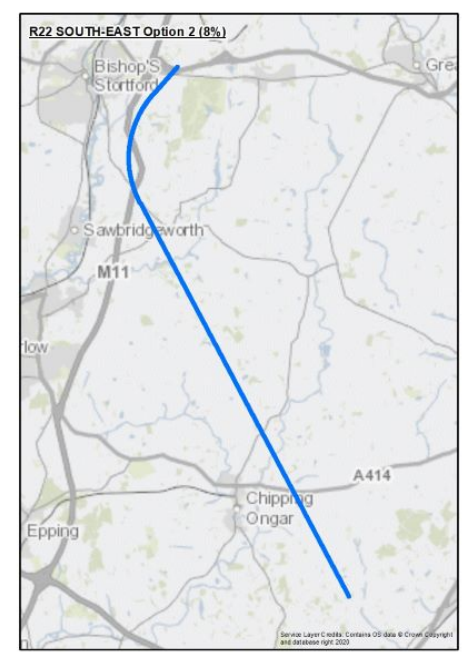


<p>Option 1 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Brentwood.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNAV 1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 4041 existing households, which equates to an approximate population of 10500. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 4141 households and an approximate population of 10800.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 19 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 10500 people and 18 noise sensitive buildings.</p>			

<p>The estimated track length is 30km (16Nm).</p> <p>Option 1 overflies a total of 19 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

### 9.3 SID RW 22 SOUTH-EAST Option 2 (8%)

Design Principle Evaluation				
Option Name: SID RW 22 SOUTH-EAST Option 2 (8%)		ACCEPT		
<p><i>Option Description:</i></p> <p>Option 2 is provided as an RNP1 replication of the current DET1R SID, and uses RF turns to create an approximate replication of the existing published conventional DET1R departure with a climb gradient of 8%. RNP1 + RF provides a higher degree of accuracy during the turns.</p> <p>As a replicated route it follows a similar track over the ground as current published route and connects to the NATS network in the same area as the existing SID.</p> <p>In addition, as the track seeks to replicate a current procedure it is within the existing NPRs.</p>				
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET	
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>				
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S</p>	NOT MET	PARTIAL	MET	

programme, taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Brentwood.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET

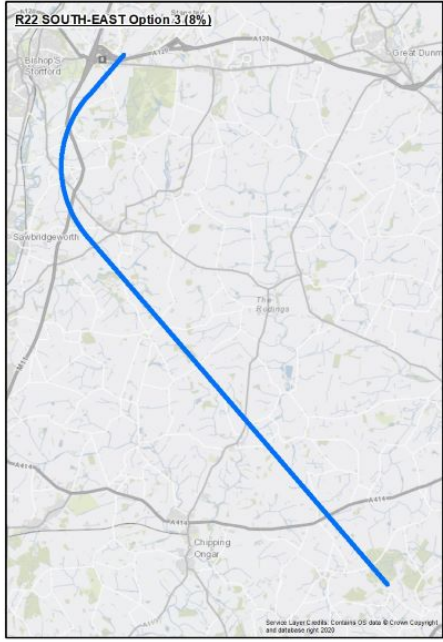
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This option is designed as RNP 1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 overflies 3875 existing households, which equates to an approximate population of 10200. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 3975 households and an approximate population of 10500.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2 overflies a total of 19 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 currently overflies a population of approximately 10200 people and 18 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 2 overflies a total of 19 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as</p>			

part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.



## 9.4 SID RW 22 SOUTH-EAST Option 3 (8%)

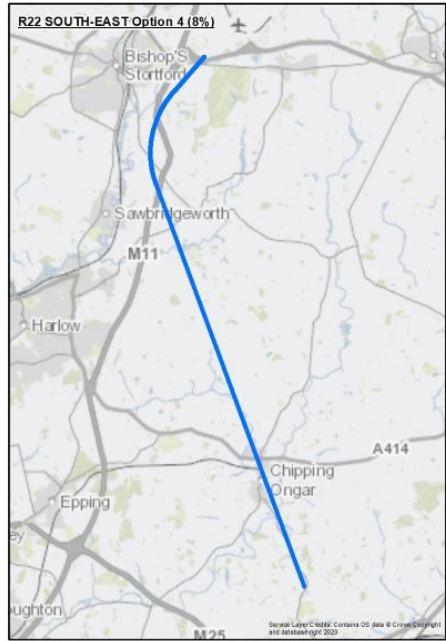
Design Principle Evaluation			
Option Name: SID RW 22 SOUTH-EAST – Option 3 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 3 is an RNP1 route that uses RF turns and has a later turn than the current SID. It aims to avoid overflight of the SSSI at Hatfield Forest, and the track then continues to the eastern edge of the envelope routing towards Ingatestone. It routes further away from Chipping Ongar than other options within this envelope.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 3 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Brentwood.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNP 1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 overflies 1290 existing households, which equates to an approximate population of 3300. This is less than the 'do minimum' option.</p> <p>This option does not fly over any proposed developments. !</p> <p>The route aims to avoid overflight of large built-up areas and route directly to a network joining point consistent with the existing conventional SID.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3 overflies a total of 11 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 3 currently overflies a population of approximately 3300 people and 10 noise sensitive buildings.</p> <p>The estimated track length is 31 km (17Nm).</p> <p>Option 3 overflies a total of 11 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 9.5 SID RW 22 SOUTH-EAST Option 4 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 SOUTH-EAST – Option 4 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 4 has been designed to RNP1 using RF turns and has a later turn than used within the current SID. This option routes towards the western edge of the envelope towards Kelvedon Hatch and Brentwood. It creates a possible noise relief route when combined with options that route to the east side of the envelope (Options 3 or 5).</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with</p>	NOT MET	PARTIAL	MET

CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Brentwood.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and	NOT MET	PARTIAL	MET

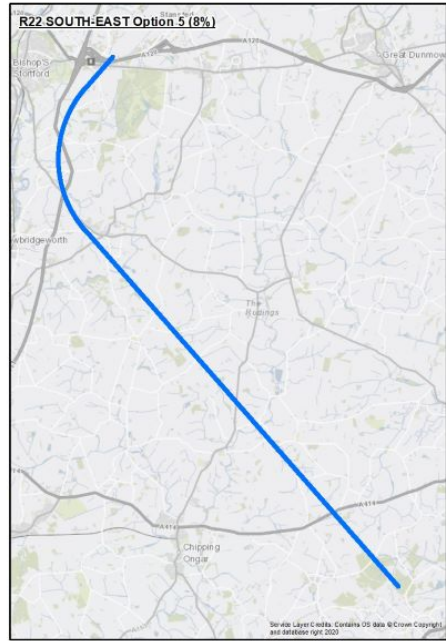
objective benefit in doing so.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET		MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option is designed as RNP 1, is flyable and provides for a continuous climb.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 4864 existing households, which equates to an approximate population of 12100. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 5464 households and an approximate population of 13600. The route aims to avoid overflight of large built-up areas and route directly to a network joining point consistent with the existing conventional SID.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 36 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 12100 people and 34 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 4 overflies a total of 36 noise sensitive receptors and 600 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>



with other airports and maintaining priority access for Emergency Services.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
DP <b>A</b> : Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 9.6 SID RW 22 SOUTH EAST Option 5 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 SOUTH-EAST – Option 5 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 5 has been designed as an RNP1 route using RF turns. Utilising RF turns, this route requires aircraft to turn left as tight as permissible under ICAO PANS-OPS rules, to route towards the eastern edge of the envelope. By doing this, it aims to avoid overflight of Hatfield Forest (SSSI), Matching Green and Chipping Ongar.</p> <p>This route provides a viable alternative for consideration that aims to avoid overflight of conurbations and noise sensitive areas whilst providing efficient access to the network.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 5 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Brentwood.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route is designed as RNP 1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 overflies 1557 existing households, which equates to an approximate population of 4000. This is less than the 'do minimum' option.</p> <p>This option does not fly over any proposed developments. The route aims to avoid overflight of large built-up areas and route directly to a network joining point consistent with the existing conventional SID.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 5 overflies a total of 9 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 5 currently overflies a population of approximately 4000 people and 8 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 5 overflies a total of 9 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

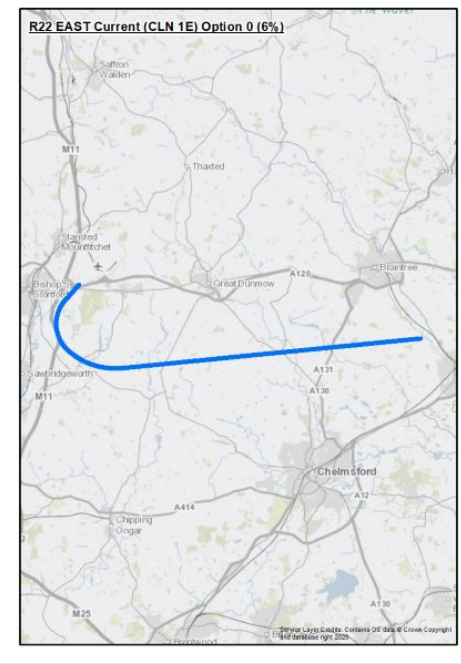
## 9.7 SID RW 22 SOUTH-EAST - Viable but Poor Fit Options

Option	Safety	Policy	Demand	Outcome
<b>A6 Left Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a constant 450° left-hand turn around the airport, and then begin heading southeast.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with arriving traffic. As a result this option would not comply with the Safety DP.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				
<b>B7 Right Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a right-hand turn, fly around the airport, and then begin heading Southeast.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with arriving traffic. As a result this option would not comply with the Safety DP.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				

<b>C8 Extended straight ahead then left</b>	<b>S</b>	<b>P</b>	<b>D</b>	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would fly an extended straight-ahead phase and then make a gradual left-hand turn to begin heading southeast towards the Letterbox.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				

# 10 SID RW 22 EAST

## 10.1 SID RW 22 EAST Option 0 (6%)

Design Principle Evaluation			
Option Name: SID RW 22 EAST Option 0	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 0 is a reproduction of the existing CLN1E SID using RF legs. However, a steeper climb gradient has been used in this option as it has been set at 6% which is lower than the others that have been presented within this envelope. The existing published SID is set at 3.3% and is restricted in the climb due to airspace constraints.</p> <p>As an existing but re-profiled route it follows the same lateral track over the ground as current published route and connects to the NATS network in a similar area as the existing SID and in the centre of the design envelope.</p> <p>In addition, as the track seeks to replicate a current procedure it is within the existing NPRs.</p> <p>This is the 'do minimum' for SID RW 22 EAST Options.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and has not been designed by CAA Approved IFP designers but with criteria that are not fully in accordance with ICAO PANS-OPS requirements.</p>			



<p>Assessed in isolation, this does not fully meet the requirements of PANS-OPS8168 but has been demonstrated to be safe and flyable. It is therefore considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, is not a PBN route and is not deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 0. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>

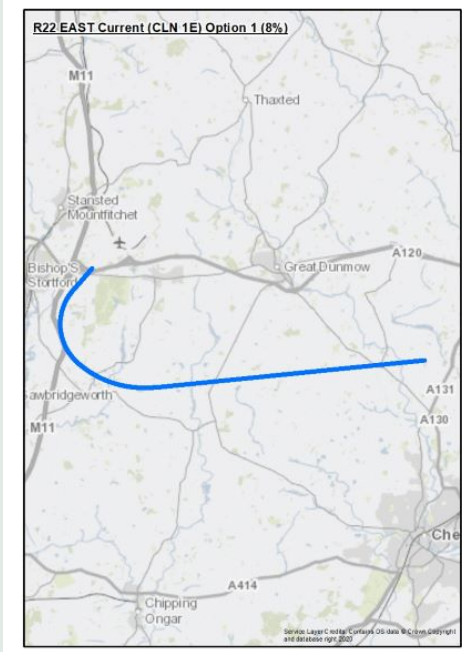
have to be a clear and objective benefit in doing so.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and so will not overfly any new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route is designed as RNP 1, is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and overflies 1781 existing households, which equates to an approximate population of 4600.</p> <p>Taking account of proposed future development, this impact increases to approximately 3231 households and an approximate population of 8400.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and	NOT MET	PARTIAL	MET

AONB), cultural or historic assets and sites providing care.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 0 (the 'do minimum' option for this envelope) overflies a total of 13 noise sensitive receptors.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 , the 'do minimum' option for this envelope, currently overflies a population of approximately 4600 people and 11 noise sensitive buildings.</p> <p>The estimated track length is 37km (20Nm).</p> <p>Option 0 overflies a total of 13 noise sensitive receptors and 1450 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 0 is the 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET

*Summary of Qualitative Assessment*

As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.

## 10.2 SID RW 22 EAST (Current CLN 1E) Option 1 (NC) (8%)

Design Principle Evaluation			
Option Name: SID RW 22 EAST (CLN 1E) Option 1 (8%)			ACCEPT
<p><i>Option Description:</i></p> <p>Option 1 is a reproduction of the existing published CLN1E SID using RF legs. However, a steeper climb gradient has been used in this option as it has been set at 8% which is consistent with the other new options within this envelope. The existing SID is set at 3.3% and is restricted in the climb due to airspace constraints.</p> <p>As an existing but re-profiled route it follows the same lateral track over the ground as current published route and connects to the NATS network in a similar area as the existing SID and in the centre of the design envelope.</p> <p>In addition, as the track seeks to replicate a current procedure it is within the existing NPRs.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has not been designed by CAA Approved IFP designers but with criteria that are not fully in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, this does not fully meet the requirements of PANS-OPS8168 but has been demonstrated to be safe and flyable. It is therefore considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

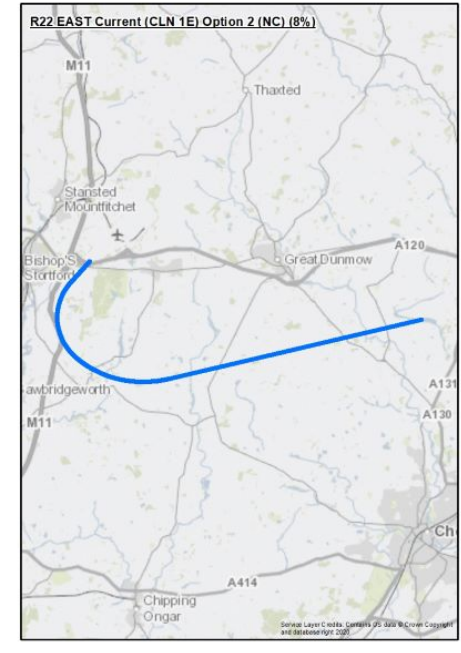
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is not a PBN route and is not deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available</p>	NOT MET	PARTIAL	MET

aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route is designed as RNP 1, is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 890 existing households, which equates to an approximate population of 2300. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 990 households and an approximate population of 2600.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of seven noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 2300 people and 6 noise sensitive buildings.</p> <p>The estimated track length is 37km (20Nm).</p> <p>Option 1 overflies a total of 7 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			



### 10.3 SID RW 22 EAST (Current CLN 1E) Option 2 (NC) (8%)

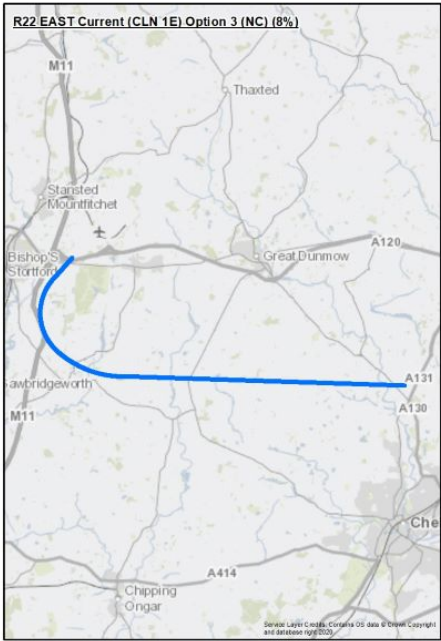
Design Principle Evaluation			
Option Name: SID RW 22 EAST – Current CLN 1E Option 2 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 2 has been designed to RNP 1 using RF turns at 8%. This option continues the RF turn to the north-east towards the northern edge of the envelope (towards North End). It then routes towards the racecourse at Great Leighs and to the northern point of the letterbox. This route responds to feedback from stakeholders by aiming to avoid the overflight of noise sensitive areas, whilst providing an efficient option for consideration.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 is an amended version of a current procedure that is in operation at STN and has been approved for use by the CAA, although it is not compliant with PANS Ops. It has been used safely for several years and the Post Implementation Review (PIR) supports that this route is operated safely. At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 2 is not a PBN route and is not deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

SID is anticipated to be RNP 1 and is flyable. Provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 overflies 989 existing households, which equates to an approximate population of 2500. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1089 households and an approximate population of 2700.</p> <p>The route aims to avoid overflight of large built-up areas and route directly to a network joining point consistent with the existing conventional SID. At the time of writing, the route does not overfly any newly proposed housing sites.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2 overflies a total of 8 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 currently overflies a population of approximately 2500 people and 6 noise sensitive buildings.</p> <p>The estimated track length is 37km (20Nm).</p> <p>Option 2 overflies a total of 8 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 10.4 SID RW 22 EAST (Current CLN 1E) Option 3 (NC) (8%)

Design Principle Evaluation			
Option Name: SID RW 22 EAST – Current CLN 1E Option 3 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option has also been designed as an RNP1 route using RF turns. After departure, it has a shallower turn to the north of High Easter than the current SID and routes towards the southern edge of the envelope towards Gamble’s Green.</p> <p>This route responds to feedback from stakeholders by aiming to avoid the overflight of noise sensitive areas, whilst providing an efficient option for consideration.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 is an amended version of a current procedure that is in operation at STN and has been approved for use by the CAA, although it is not compliant with PANS Ops. It has been used safely for several years and the Post Implementation Review (PIR) supports that this route is operated safely. At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 3 is not a PBN route and is not deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route has been designed as RNP 1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 overflies 1114 existing households, which equates to an approximate population of 2700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2314 households and an approximate population of 5700.</p> <p>The route aims to avoid overflight of large built-up areas and route directly to a network joining point consistent with the existing conventional SID.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3 overflies a total of 7 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 3 currently overflies a population of approximately 2700 people and 6 noise sensitive buildings.</p> <p>The estimated track length is 37km (20Nm).</p> <p>Option 3 overflies a total of 7 noise sensitive receptors and 1200 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			



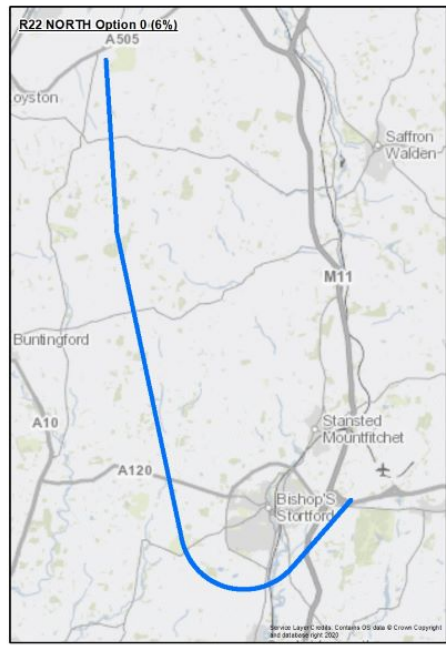
## 10.5 SID RW 22 EAST - Viable but Poor Fit Options

Option	Safety	Policy	Demand	Outcome
<b>A4 Left Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a constant 540° left-hand turn, fly fully around the airport, and then begin heading East towards the Letterbox.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				
<b>B5 Right Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a 180° right-hand turn (opposite to that currently flown), fly around the airport, and then begin heading East.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with arriving traffic. As a result this option would not comply with the Safety DP.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				

<b>C6 Extended straight ahead then South (Long/Short)</b>	<b>S</b>	<b>P</b>	<b>D</b>	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would fly straight ahead and then make a gradual 180° left-hand turn to begin heading East.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				

# 11 SID RW 22 NORTH

## 11.1 SID RW 22 NORTH Option 0 (6%)

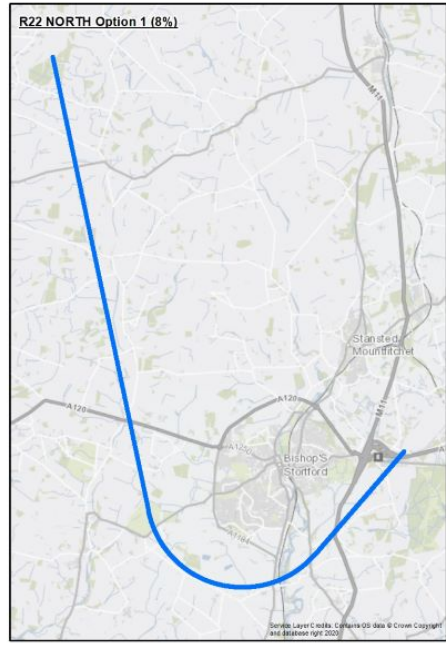
Design Principle Evaluation			
Option Name: SID RW 22 NORTH Option 0 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 0 is included to provide a replication of the existing BKY5R SID utilising PBN technology. This option is designed as an RNAV1 route utilising fly-by waypoints to replicate the current procedure.</p> <p>As a replicated route it follows a similar track over the ground to the current published route and connects to the NATS network in the same area as the existing SID.</p> <p>In addition, as the route seeks to replicate a current procedure it is within the existing NPRs.</p> <p>This is the 'do minimum' for SID RW 22 NORTH Options</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 0. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and so will not overfly any new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>SID is designed as RNAV 1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and overflies 1457 existing households, which equates to an approximate population of 3700.</p> <p>Taking account of proposed future development, this impact is not expected to increase.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 0 (the 'do minimum' option for this envelope) overflies a total of 17 noise sensitive receptors.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, currently overflies a population of approximately 3700 people and 10 noise sensitive buildings.</p>			

<p>The estimated track length is 43km (23Nm).</p> <p>Option 0 overflies a total of 17 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 0 is the 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 11.2 SID RW 22 NORTH Option 1 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 NORTH Option 1 (8%)	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 1 is included to provide a <b>replication</b> of the existing BKY5R SID utilising PBN technology. This option is designed as an <b>RNAV1</b> option utilising fly-by waypoints to replicate the current procedure with a climb gradient of 8% which is consistent with the other options within this envelope.</p> <p>As a replicated route it follows a similar track over the ground as current published route and connects to the NATS network in the same area as the existing SID.</p> <p>In addition, as the track seeks to replicate a current procedure it is within the existing NPRs.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this"</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

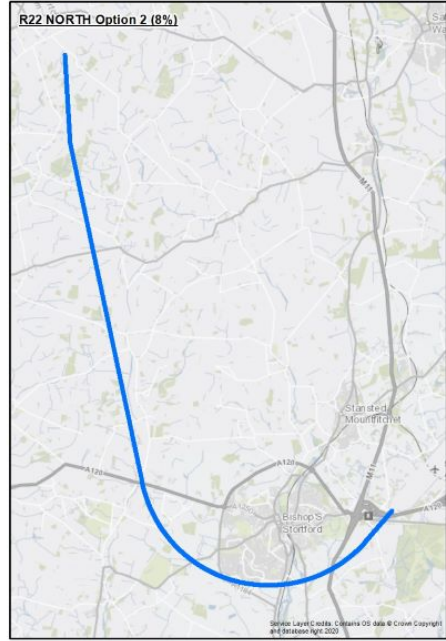
<p>Option 1 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i> SID is designed as RNAV 1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflowed.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 1266 existing households, which equates to an approximate population of 3200. This is less than the 'do minimum' option.</p> <p>This option does not fly over any proposed developments. This option is a replication route that has been designed with a steeper climb gradient than Option 0, the 'do minimum' option.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 13 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 1 currently overflies a population of approximately 3200 people and 6 noise sensitive buildings.</p> <p>The estimated track length is 43km (23Nm).</p> <p>Option 1 overflies a total of 13 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

### 11.3 SID RW 22 NORTH Option 2 (8%)

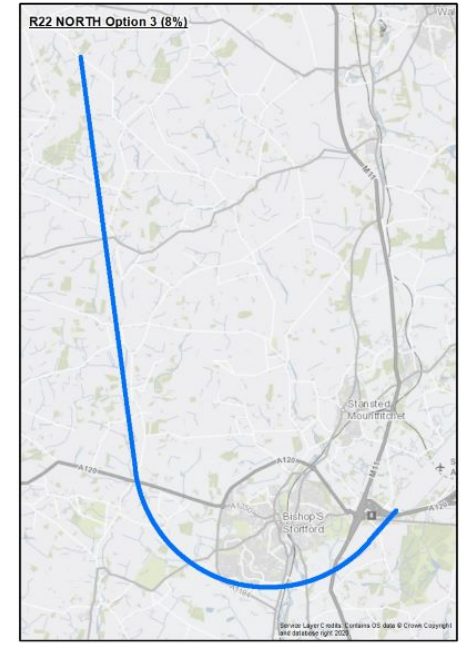
Design Principle Evaluation			
Option Name: SID RW 22 NORTH Option 2		REJECT	
<p><i>Option Description:</i></p> <p>Option 2 is included to provide a replication of the existing BKY5R SID utilising PBN technology. This option is designed as an RNP1 option utilising RF turns at 8% climb gradient. Due to the accuracy of the type of turn, the initial turn is tighter than that of Option 1 which results in a right turn slightly closer to Bishops Stortford.</p> <p>As a replicated route it follows a similar track over the ground as current published route and connects to the NATS network in the same area as the existing SID.</p> <p>In addition, as the track seeks to replicate a current procedure it is within the existing NPRs.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 2 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNP 1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 overflies 2483 existing households, which equates to an approximate population of 6600. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 3133 households and an approximate population of 8300.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2 overflies a total of 19 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 currently overflies a population of approximately 6600 people and 12 noise sensitive buildings.</p> <p>The estimated track length is 41 km (22Nm).</p> <p>Option 2 overflies a total of 19 noise sensitive receptors and 650 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 11.4 SID RW 22 NORTH Option 3 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 NORTH Option 3		REJECT	
<p><i>Option Description:</i></p> <p>This is an RNAV1 option at 8% that has been developed to provide a more direct track towards the centre of the design envelope using fly-by waypoints.</p> <p>It aims to reduce the number of track miles flown by turning slightly earlier and flying slightly closer to Bishops Stortford than the RNAV1 replicated Option 1. This earlier turn also has the potential to aid capacity and reduce delays for following flights on South-West departure routes.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

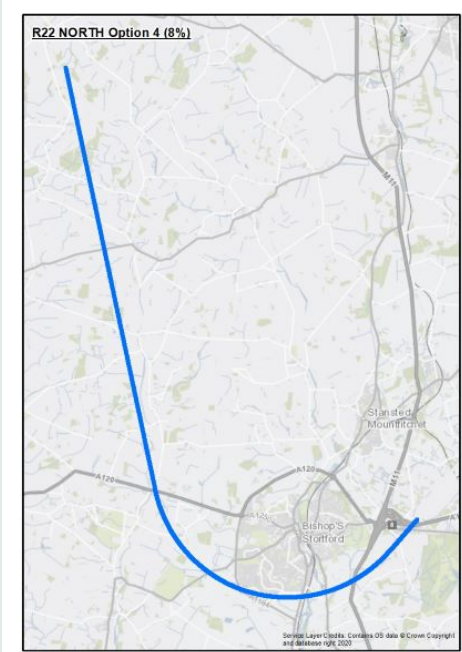
<p>Option 3 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i></p> <p>This option is designed as RNAV 1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 overflies 2274 existing households, which equates to an approximate population of 6100. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2924 households and an approximate population of 7800.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3 overflies a total of 16 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 3 currently overflies a population of approximately 6100 people and 9 noise sensitive buildings.</p> <p>The estimated track length is 41 km (22Nm).</p> <p>Option 3 overflies a total of 16 noise sensitive receptors and 650 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 11.5 SID RW 22 NORTH Option 4 (8%)

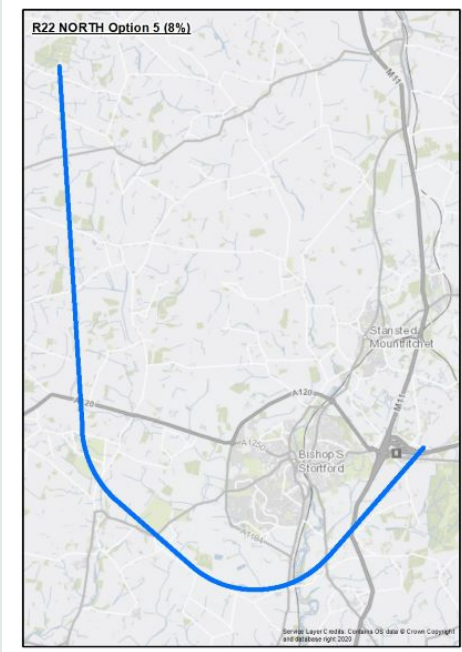
Design Principle Evaluation			
Option Name: SID RW 22 NORTH Option 4 (8%)		REJECT	
<p><i>Option Description:</i></p> <p>This option utilises RNP1 using RF turns at 8%.</p> <p>It replicates the current SID initially, but removes the second easterly turn of the replicated route to maintain a heading that terminates in a slightly more westerly position</p> <p>Due to the accuracy of the type of turn, the initial turn is tighter than that of the replicated option which results in a right turn slightly closer to Bishops Stortford than the than the RNAV1 replicated Option 1. This earlier turn slightly reduces the number of track miles flown and has the potential to aid capacity and reduce delays for following flights on South-West departure routes</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 4 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<i>Summary of Qualitative Assessment:</i> This route is designed as RNP 1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> Option 4 overflies 2339 existing households, which equates to an approximate population of 6200. This is more than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 2989 households and an approximate population of 8000.			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 4 overflies a total of 16 noise sensitive receptors. This is fewer than the 'do minimum' option.			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i>			

<p>Option 4 currently overflies a population of approximately 6200 people and 9 noise sensitive buildings.</p> <p>The estimated track length is 41 km (22Nm).</p> <p>Option 4 overflies a total of 16 noise sensitive receptors and 650 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 11.6 SID RW 22 NORTH Option 5 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 NORTH Option 5 (8%)	ACCEPT		
<p><i>Option Description:</i></p> <p>This option is an RNAV 1 option at 8% that utilises fly-by waypoints.</p> <p>It features a later and wider turn than the current SID with a straight stabilised segment between the turns. The result is a track that initially routes along the western edge of the envelope before turning back on a northerly track towards the centre of the design envelope at BKY.</p> <p>This option has been designed to provide maximum noise relief for Bishops Stortford and offers potential for noise relief when combined with option 6 or 7.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

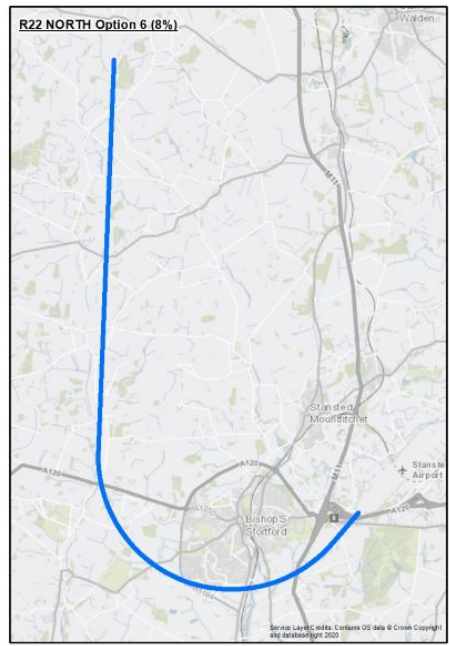
<p>Option 5 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET



<i>Summary of Qualitative Assessment:</i> This option is designed as RNAV 1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> Option 5 overflies 921 existing households, which equates to an approximate population of 2300. This is less than the 'do minimum' option. This option does not fly over any proposed developments.			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 5 overflies a total of 7 noise sensitive receptors. This is fewer than the 'do minimum' option.			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i>			

<p>Option 5 currently overflies a population of approximately 2300 people and 4 noise sensitive buildings.</p> <p>The estimated track length is 44km (24Nm).</p> <p>Option 5 overflies a total of 7 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 11.7 SID RW 22 NORTH Option 6 (8%)

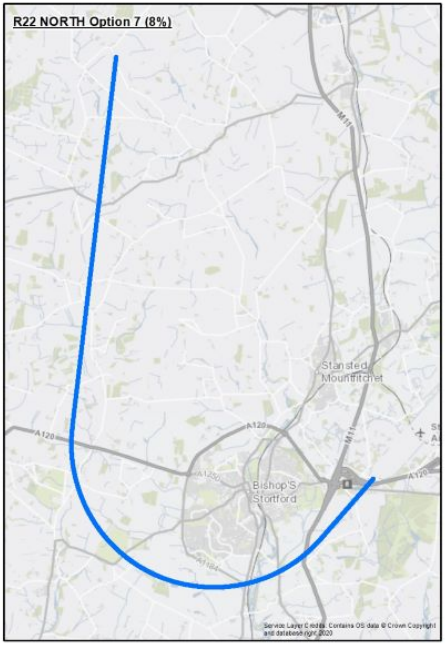
Design Principle Evaluation			
Option Name: SID RW 22 NORTH – Option 6		REJECT	
<p><i>Option Description:</i></p> <p>This option utilises RNP1 using RF turns at 8%.</p> <p>It follows the same initial turn as the replicated route utilising RF before turning to the north-east to route to the eastern side of the design envelope.</p> <p>Due to the accuracy of the type of turn, the initial turn is tighter than that of the replicated option which results in a right turn slightly closer to Bishops Stortford than the RNAV1 replicated Option 1.</p> <p>This earlier turn slightly reduces the number of track miles flown and has the potential to aid capacity and reduce delays for following flights on West departure routes. It also offers potential for noise relief if combined with option 5 or 8.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 6. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies approximately the same number of noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route is designed as RNP 1, is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 overflies 2474 existing households, which equates to an approximate population of 6500. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 3124 households and an approximate population of 8300.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 6 overflies a total of 17 noise sensitive receptors.</p> <p>This is approximately the same number as the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 currently overflies a population of approximately 6500 people and 11 noise sensitive buildings.</p> <p>The estimated track length is 41 km (22Nm).</p> <p>Option 6 overflies a total of 17 noise sensitive receptors and 650 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 6 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 11.8 SID RW 22 NORTH Option 7 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 NORTH – Option 7 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This is an RNP1 route using RF turns at 8%.</p> <p>It features a wider turn than the replicated SID to a point abeam Thorley before using an RF turn to route to the north-east of the design envelope towards Duddenhoe.</p> <p>The wider track of this route aims to avoid overflight of Bishops Stortford whilst also providing potential for noise relief if combined with option 5 or 8.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

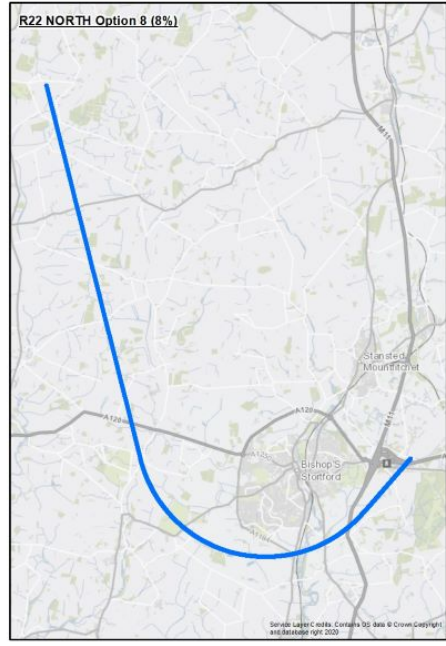
<p>Option 7 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 7. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i></p> <p>This route has been designed as RNP 1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7 overflies 1119 existing households, which equates to an approximate population of 2800. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1319 households and an approximate population of 3300.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 7 overflies a total of 13 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7 currently overflies a population of approximately 2800 people and 7 noise sensitive buildings.</p> <p>The estimated track length is 43km (23Nm).</p> <p>Option 7 overflies a total of 13 noise sensitive receptors and 200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 7 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 11.9 SID RW 22 NORTH Option 8 (8%)

Design Principle Evaluation			
Option Name: SID RW 22 NORTH – Option 8		ACCEPT	
<p><i>Option Description:</i></p> <p>This option utilises an RNP1 using RF turns at 8%.</p> <p>It features a wider initial turn than the current SID, with the initial right turn onto a north-north-westerly track abeam Thorley. This means the track routes along the western edge of the design envelope and heads towards Melbourn.</p> <p>This option has been designed to provide a fuel-efficient route for traffic heading to the north west, and reduced noise impact for Bishops Stortford. It also offers potential for noise relief elsewhere when combined with option 6 or 7.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 8 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 8. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<i>Summary of Qualitative Assessment:</i>			
This route is designed as RNP 1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i>			
Option 8 overflies 803 existing households, which equates to an approximate population of 2000. This is less than the 'do minimum' option.			
Taking account of proposed future development, this impact increases to approximately 1003 households and an approximate population of 2500.			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i>			
This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i>			
An initial quantitative assessment has identified that Option 8 overflies a total of 8 noise sensitive receptors.			
This is fewer than the 'do minimum' option.			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i>			

<p>Option 8 currently overflies a population of approximately 2000 people and 5 noise sensitive buildings.</p> <p>The estimated track length is 43km (23Nm).</p> <p>Option 8 overflies a total of 8 noise sensitive receptors and 200 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 8 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 11.10 SID RW 22 NORTH - Viable but Poor Fit Options

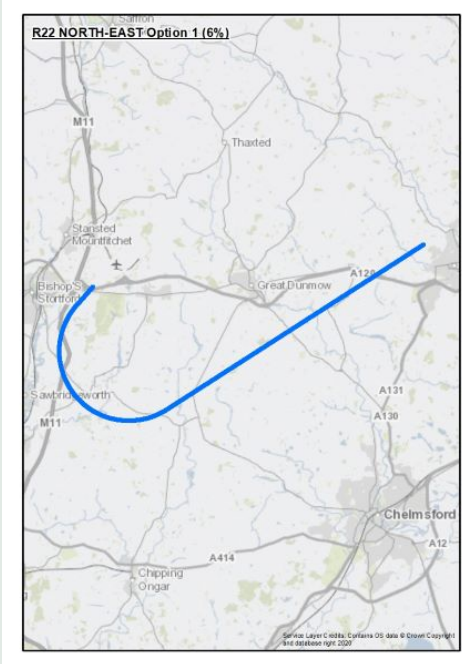
Option	Safety	Policy	Demand	Outcome
<b>A9 Left Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a 270° left-hand turn, fly around the airport, and then begin heading Northwest towards the end of the design envelope.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				
<b>B10 Right Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a 450° right-hand turn, fly around the airport, and then begin heading Northwest towards the Letterbox.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative</p>				

(and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.				
<b>C11 Extended straight ahead then North (Long/Short)</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would continue straight ahead then make a right turn north towards the centre of the envelope. A longer and shorter version of this option were considered.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it it would overfly the proposed location of a large garden village where a sizeable number of residential developments are planned, and having a significant noise impact. Additionally this option would not comply with the environmental improvement initiative within the AMS as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for impact on the subsequent departures from STN, limiting capacity and runway throughput. This would result in aircraft being held for departure for longer, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				
<b>D12 Straight ahead then Left and 180 degree right</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would continue straight ahead for approximately 3NM then make a left turn in a southerly direction. The aircraft would then begin a gentle 180° right turn to the south of Harlow back towards the northerly letterbox. This takes the track significantly outside the existing design envelope</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for impact on the subsequent departures from STN, limiting capacity and runway throughput. This would result in aircraft being held for departure for longer, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				



# 12 SID RW 22 NORTH-EAST

## 12.1 SID RW 22 NORTH-EAST Option 1 (6%)

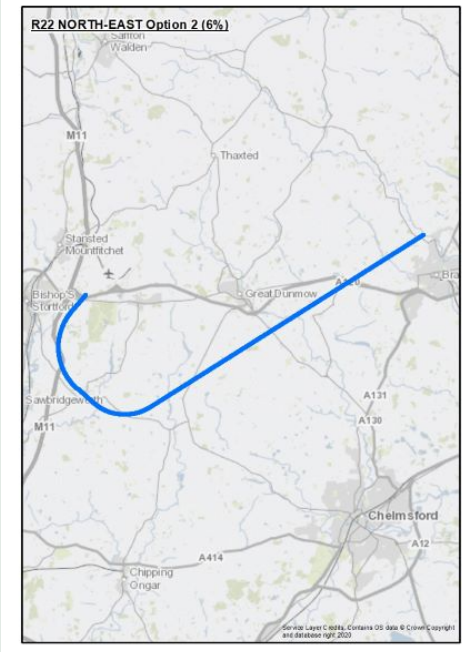
Design Principle Evaluation			
Option Name: SID RW 22 NORTH-EAST Option 1 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNP1 departure route at 6% climb gradient that utilises RF turns to follow a direct track towards the centre point of the design envelope.</p> <p>It turns left as soon as possible after departure (based on the rules for this type of procedure) and follows a track to the north of Braintree. This is the tightest radius possible that would give concentrated aircraft tracks with little dispersion.</p> <p>The initial turn after departure avoids overflight of Sawbridgeworth and the route has also been designed to route just north of Braintree.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, COLNE.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>SID is designed as RNP 1, is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 6579 existing households, which equates to an approximate population of 16400. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 11079 households and an approximate population of 27700.</p> <p>This option is a new route and is intended to provide a more direct route for aircraft flying to northern Europe and Scandinavia. Currently, aircraft would use the existing CLN1E departure route (detailed within RW 22 EAST envelope). Therefore, this option will be compared to the 'do minimum' option (RW 22 EAST Option 0).</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 27 noise sensitive receptors.</p> <p>This is approximately the same number as the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike	NOT MET	PARTIAL	MET

<p>the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 16400 people and 25 noise sensitive buildings.</p> <p>The estimated track length is 53km (29Nm).</p> <p>Option 1 overflies a total of 27 noise sensitive receptors and 4500 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 12.2 SID RW 22 NORTH-EAST Option 2 (6%)

Design Principle Evaluation			
Option Name: SID RW 22 NORTH-EAST Option 2 (6%)			ACCEPT
<p><i>Option Description:</i></p> <p>Option 2 is an alternative RNAV1 route at 6% using fly-by waypoints that initiates a turn on to a north-easterly track earlier than Option 1 and routes to the centre of the design envelope.</p> <p>The use of RNAV as a design standard has potential to create greater track/noise dispersal than Option 1.</p> <p>The initial turn after departure avoids the overflight of Sawbridgeworth and this option routes further north of High Easter than Option 1. It also avoids overflight of Braintree by reaching 7,000ft further north of the town than Option 3.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

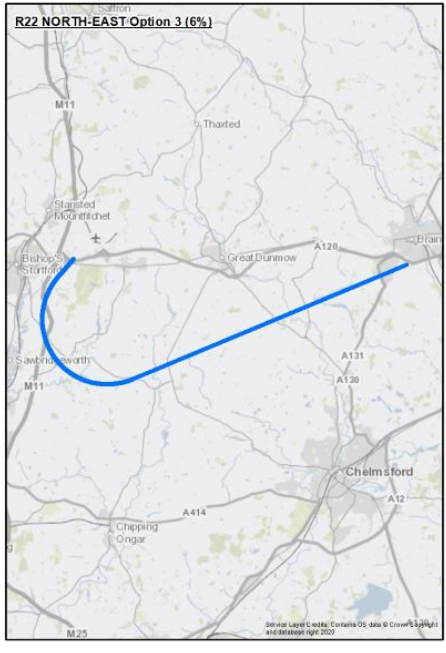
<p>Option 2 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, COLNE.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route option is designed as RNAV 1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 overflies 6843 existing households, which equates to an approximate population of 16900. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 12793 households and an approximate population of 31600.</p> <p>This option is a new route and is intended to provide a more direct route for aircraft flying to northern Europe and Scandinavia.</p> <p>Currently, aircraft would use the existing CLN departure route (detailed within RW 22 EAST envelope). Therefore, this option will be compared to the 'do minimum' option (RW 22 EAST Option 0).</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2 overflies a total of 32 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 currently overflies a population of approximately 16900 people and 30 noise sensitive buildings.</p> <p>The estimated track length is 51km (28Nm).</p> <p>Option 2 overflies a total of 32 noise sensitive receptors and 5950 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			



### 12.3 SID RW 22 NORTH-EAST Option 3 (6%)

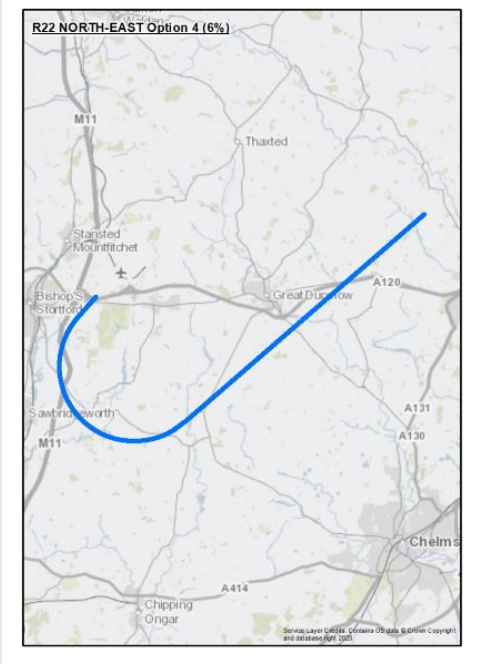
Design Principle Evaluation			
Option Name: SID RW 22 NORTH-EAST Option 3 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 3 utilises an RNP1 using RF turns at 6% to turn to the north-east and routes along the southern edge of the design envelope.</p> <p>The initial turn after departure avoids the overflight of Sawbridgeworth although this option routes closer to Braintree than Option 2, the track reaches 7,000ft before overflying the southern part of the town.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 3 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, COLNE.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This option is designed as RNP1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 overflies 11680 existing households, which equates to an approximate population of 28100. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 17280 households and an approximate population of 41600.</p> <p>This option is a new route and is intended to provide a more direct route for aircraft flying to northern Europe and Scandinavia. Currently, aircraft would use the existing CLN departure route (detailed within RW 22 EAST envelope). Therefore, this option will be compared to the 'do minimum' option (RW 22 EAST Option 0).</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3 overflies a total of 25 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 currently overflies a population of approximately 28100 people and 23 noise sensitive buildings.</p> <p>The estimated track length is 51km (28Nm).</p> <p>Option 3 overflies a total of 25 noise sensitive receptors and 5600 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 12.4 SID RW 22 NORTH-EAST Option 4 (6%)

Design Principle Evaluation			
Option Name: SID RW 22 NORTH-EAST Option 4 (6%)	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 4 utilises an RNP1 using RF turns at 6% to turn to the north-east and routes to the northern edge of the design envelope.</p> <p>It turns left as soon as possible after departure (based on the rules for this type of procedure) and follows a track that routes south of Great Dunmow and well north of Braintree. This option has been created as an option that seeks to minimise the overflight of large and noise sensitive communities that are affected by the current East (CLN) SID.</p> <p>It also has the potential to reduce delays and noise dispersal for aircraft on the CLN departure by creating greater divergence after departure.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, COLNE.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>

climb and descent to/from both ends of the runway.			
<i>Summary of Qualitative Assessment:</i> This route is designed as RNP1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> Option 4 overflies 2888 existing households, which equates to an approximate population of 7700. This is more than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 14288 households and an approximate population of 38400. This option is a new route and is intended to provide a more direct route for aircraft flying to northern Europe and Scandinavia. Currently, aircraft would use the existing CLN departure route (detailed within RW 22 EAST envelope). Therefore, this option will be compared to the 'do minimum' option (RW 22 EAST Option 0).			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 4 overflies a total of 12 noise sensitive receptors. This is fewer than the 'do minimum' option.			

<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 7700 people and 10 noise sensitive buildings.</p> <p>The estimated track length is 54km (29Nm).</p> <p>Option 4 overflies a total of 12 noise sensitive receptors and 11400 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			



## 12.5 SID RW 22 NORTH-EAST - Viable but Poor Fit Options

Option	Safety	Policy	Demand	Outcome
<b>A5 Left Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a constant 540° left-hand turn, flying fully around the airport, and then begin heading Northeast towards the Letterbox.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				
<b>B6 Right Wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a 180° right-hand turn, fly around the airport, and then begin heading Northeast towards the Letterbox.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with arriving traffic. As a result this option would not comply with the Safety DP.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				

C7 Left turn (gradual)	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a gradual left-hand turn, flying further to the south before turning back towards the Northeast. This track takes it outside the existing design envelope.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions. It may also interact with traffic from other airports in the London TMA which is not aligned with the efficiency requirement within the AMS.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				
D8 Right turn (gradual)	S	P	D	Viable but Poor Fit
<p>After departure from RWY 22, aircraft would make a gradual right-hand turn, flying further to the north before turning back towards the Northeast. This track takes it outside the existing design envelope.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals and departures from STN on other SIDs. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				

# 13 SID RW 04 SOUTH

## 13.1 SID RW 04 SOUTH Option 0 (6%)

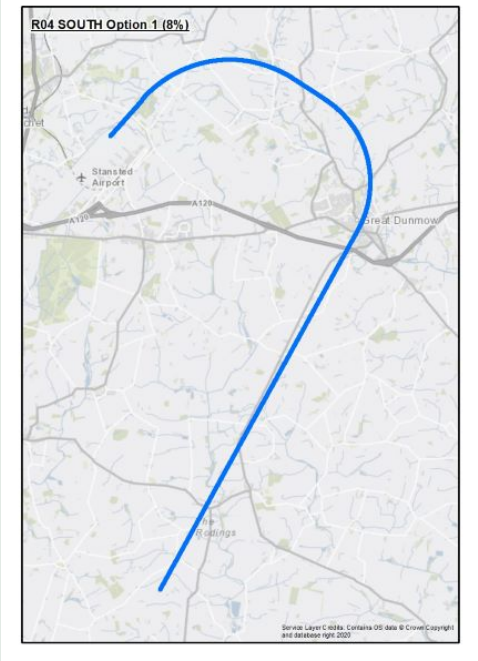
Design Principle Evaluation			
Option Name: SID RW 04 SOUTH – Option 0 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 0 is included to provide a replication of the existing LAM2S SID utilising PBN technology. This option is designed as an RNAV1 option at 6% utilising fly-by waypoints to replicate the current procedure. Option 0 is considered to represent ‘do minimum.’</p> <p>After departure this option turns right at the earliest point possible for this type of procedure and routes south reaching 7,000ft at the centre of the envelope.</p> <p>It should be noted that the existing conventional LAM 2S has a turn radius that is tighter than PANS-OPS PBN design criteria. To remain compliant, this replicated option has applied PANS-OPS minima, but this results in a first turn that is wider and results in an option that directly overflies Great Dunmow, whereas the current conventional SID routes inside it.</p> <p>This is the ‘do minimum’ for SID RW 04 SOUTH Options</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the ‘do minimum’ option for this envelope and has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements. Assessed in isolation, it is considered to be safe and designable.</p>			

At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 0. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and so will not overfly any new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			

<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and overflies 4975 existing households, which equates to an approximate population of 11700.</p> <p>Taking account of proposed future development, this impact increases to approximately 5475 households and an approximate population of 12900.</p> <p>The route aims to avoid Thaxted (straight ahead) and Stebbing and Braintree after the first turn. However, it potentially flies closer to Great Dunmow, whereas the existing procedure turns inside it. Although the track tries to replicate a current conventional procedure, the first RNAV turn results in a wider track outside the current NPR.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

An initial quantitative assessment has identified that Option 0 (the 'do minimum' option for this envelope) overflies a total of 24 noise sensitive receptors.			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, currently overflies a population of approximately 11700 people and 22 noise sensitive buildings.</p> <p>The estimated track length is 44km (24Nm).</p> <p>Option 0 overflies a total of 24 noise sensitive receptors and 500 proposed dwelling(s).</p>			
DP <b>E</b> : We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 0 is the 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
DP <b>A</b> : Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 13.2 SID RW 04 SOUTH Option 1 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 SOUTH – Option 1 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 1 is included to provide a replication of the existing LAM2S SID utilising PBN technology. This option is designed as an <b>RNAV1</b> option at 8% utilising fly-by waypoints to replicate the current procedure.</p> <p>After departure this option turns right at the earliest point possible for this type of procedure and routes south reaching 7,000ft at the centre of the envelope.</p> <p>It should be noted that the existing conventional LAM 2S has a turn radius that is tighter than PANS-OPS PBN design criteria. To remain compliant, this replicated option has applied PANS-OPS minima, but this results in a first turn that is wider and results in an option that directly overflies Great Dunmow, whereas the current conventional SID routes inside it.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

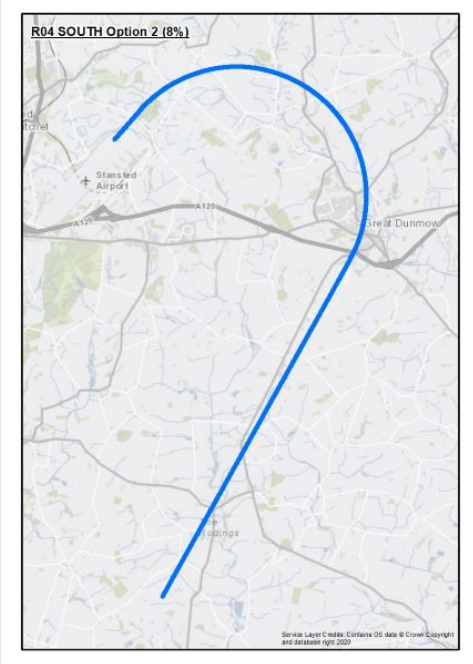
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET



facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 4419 existing households, which equates to an approximate population of 10300. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 5169 households and an approximate population of 12000.</p> <p>The route aims to avoid Thaxted (straight ahead) and Stebbing and Braintree after the first turn. However, it potentially flies closer to Great Dunmow, whereas the existing procedure turns inside it. Although the track tries to replicate a current conventional procedure, the first RNAV turn results in a wider track outside the current NPR.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 19 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			

<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 10300 people and 17 noise sensitive buildings.</p> <p>The estimated track length is 42km (23Nm).</p> <p>Option 1 overflies a total of 19 noise sensitive receptors and 750 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

### 13.3 SID RW 04 SOUTH Option 2 (8%)


Design Principle Evaluation			
Option Name: SID RW 04 SOUTH – Option 2 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is included to provide a replication of the existing LAM2S SID utilising PBN technology. This option is designed as an RNP1 option at 8% utilising RF turns which aims to replicate the current procedure.</p> <p>After departure this option turns right at the earliest point possible for this type of procedure and routes south reaching 7,000ft at the centre of the envelope.</p> <p>It should be noted that the existing conventional LAM 2S has a turn radius that is tighter than PANS-OPS PBN design criteria. To remain compliant, this replicated option has applied PANS-OPS minima, but this results in a first turn that is wider and results in an option that directly overflies Great Dunmow, whereas the current conventional SID routes inside it.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNP1 SID with RF (Radius to Fix) turns which has a higher degree of accuracy than RNAV1 and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 overflies 4565 existing households, which equates to an approximate population of 10600. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 5465 households and an approximate population of 12700.</p> <p>The route aims to avoid Thaxted (straight ahead) and Stebbing and Braintree after the first turn. However, it potentially flies closer to Great Dunmow, whereas the existing procedure turns inside it.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2 overflies a total of 19 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike</p>	NOT MET	PARTIAL	MET

<p>the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 currently overflies a population of approximately 10600 people and 17 noise sensitive buildings.</p> <p>The estimated track length is 42km (23Nm).</p> <p>Option 2 overflies a total of 19 noise sensitive receptors and 900 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

### 13.4 SID RW 04 SOUTH Option 3 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 SOUTH – Option 3 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 3 has been developed as an RNAV1 option at 8%, using fly-by waypoints.</p> <p>After departure this option turns right at the earliest point possible but has then been designed with a southbound turn that avoids overflying Great Dunmow by routing slightly further west before turning south. (This results in the route following the track of the existing CLN4S route initially).</p> <p>The track then turns south and runs down the eastern side of the design envelope, routing to the east of High Easter and reaching 7,000ft on the eastern side of the envelope.</p> <p>As well as aiming to avoid Great Dunmow immediately after departure, it also aims to avoid Thaxted and Stebbing.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

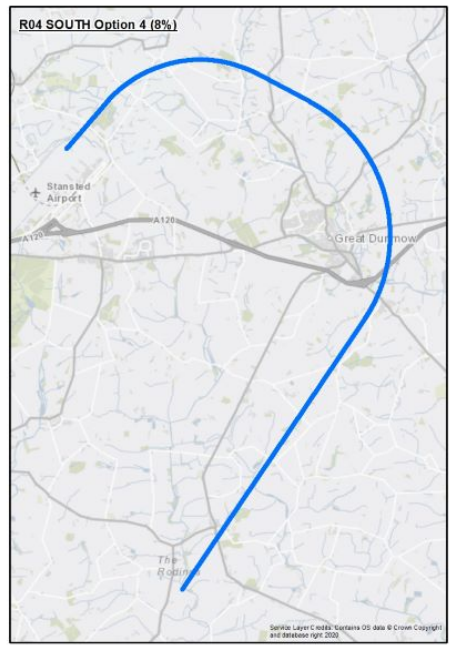
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET



facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 overflies 1953 existing households, which equates to an approximate population of 5400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2053 households and an approximate population of 5700.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3 overflies a total of 11 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 currently overflies a population of approximately 5400 people and 8 noise sensitive buildings.</p> <p>The estimated track length is 44km (24Nm).</p> <p>Option 3 overflies a total of 11 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

### 13.5 SID RW 04 SOUTH Option 4 (8%)

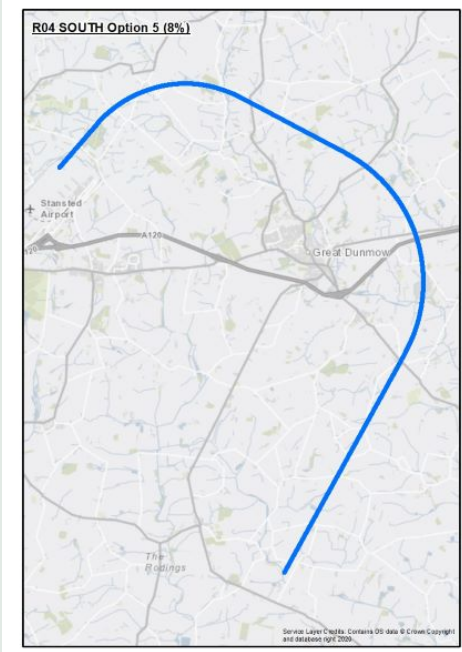
Design Principle Evaluation			
Option Name: SID RW 04 SOUTH – Option 4 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 4 has been developed as an RNAV1 option at 8%, using fly-by waypoints.</p> <p>After departure this option turns right at the earliest point possible and has then been designed with a southbound turn that avoids overflying Great Dunmow by routing slightly further west before turning south.</p> <p>The track then turns south at a position that avoids overflying the village of High Easter which results in a track more through the centre of the design envelope.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 4 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 1279 existing households, which equates to an approximate population of 3300. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1479 households and an approximate population of 3700.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 9 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 4 currently overflies a population of approximately 3300 people and 6 noise sensitive buildings.</p> <p>The estimated track length is 43km (23Nm).</p> <p>Option 4 overflies a total of 9 noise sensitive receptors and 200 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

### 13.6 SID RW 04 SOUTH Option 5 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 SOUTH – Option 5 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 5 has been developed as an RNAV1 option at 8%, using fly-by waypoints.</p> <p>After departure this option turns right at the earliest point possible and has then been designed with a southbound turn that avoids overflying Great Dunmow by routing further west before turning south.</p> <p>The track turns south at a later position that avoids overflying the village of High Easter to the south-east, which results in a track that runs down the extreme eastern edge of the design envelope.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

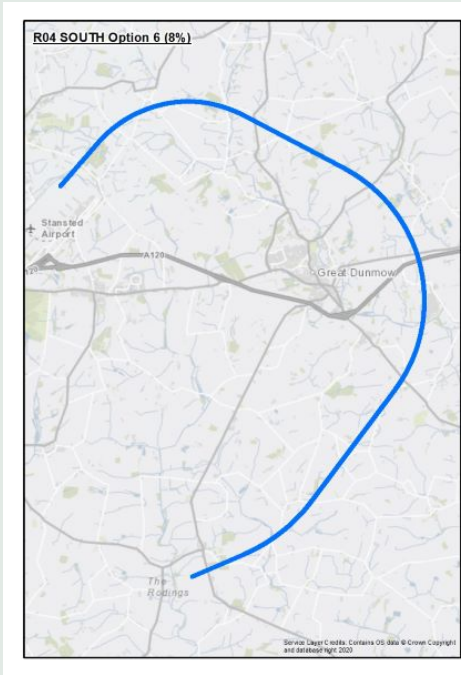
<p>Option 5 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Lambourn (LAM).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 overflies 1945 existing households, which equates to an approximate population of 5400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2045 households and an approximate population of 5700.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 5 overflies a total of 10 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 5 currently overflies a population of approximately 5400 people and 7 noise sensitive buildings.</p> <p>The estimated track length is 43km (23Nm).</p> <p>Option 5 overflies a total of 10 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

### 13.7 SID RW 04 SOUTH Option 6 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 SOUTH – Option 6 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 6 has been developed as an RNAV1 option at 8%, using fly-by waypoints.</p> <p>This option is included following stakeholder feedback to provide an alternative option to aircraft using the 04 WEST B envelope (used for aircraft heading south-west).</p> <p>After departure this option turns right at the earliest point possible and has then been designed with a southbound turn that avoids overflying Great Dunmow by routing further west before turning south.</p> <p>The track turns south beyond Great Dunmow around North End, and then makes a final turn on to a south westerly heading shortly before the end of the route option.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Enfield (ENF).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 6. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and</p>	NOT MET	PARTIAL	MET

descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 overflies 2051 existing households, which equates to an approximate population of 5600. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2151 households and an approximate population of 5900.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 6 overflies a total of 11 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 currently overflies a population of approximately 5600 people and 8 noise sensitive buildings.</p> <p>The estimated track length is 54km (29Nm).</p> <p>Option 6 overflies a total of 11 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 6 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

### 13.8 SID RW 04 SOUTH - Viable but Poor Fit Options

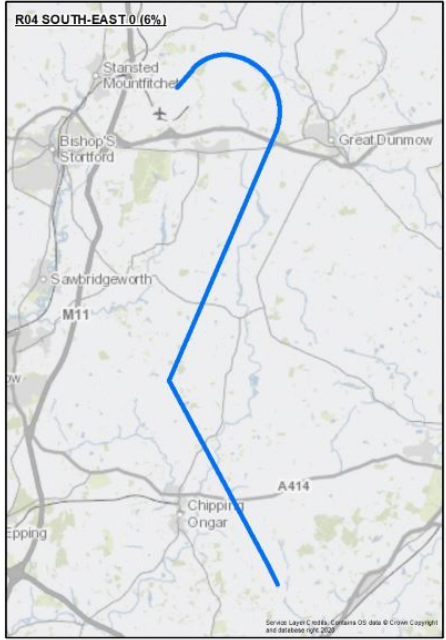
Option	Safety	Policy	Demand	Outcome
<b>A7 Left wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make a 180° left-hand turn, and then begin heading South.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				
<b>B8 Right wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make an approximate 500° right-hand turn, flying fully around the airport to gain altitude, and then begin heading South.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with arriving traffic. As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement</p>				

rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.				
<b>C9 Extended straight ahead then right</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would fly an extended straight ahead phase and then make a right-hand turn to begin heading southwest.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with arriving traffic. As a result this option would not comply with the Safety DP.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				



# 14 SID RW 04 SOUTH-EAST

## 14.1 SID RW 04 SOUTH-EAST (Current DET1D) Option 0 (6%)

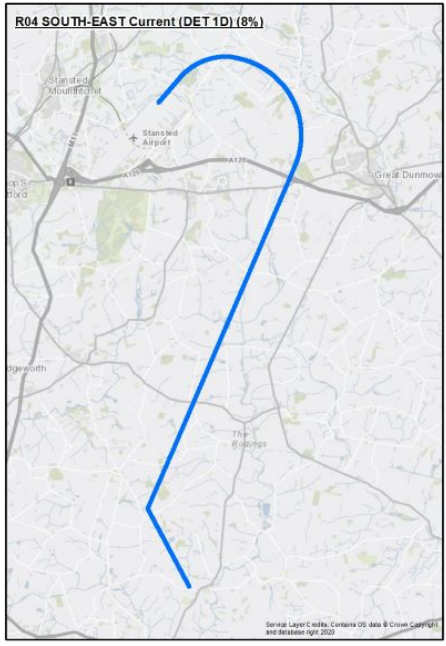
Design Principle Evaluation			
Option Name: SID RW 04 SOUTH-EAST Option 0 [Current DET 1D 6%]		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 0 is a reproduction of the existing published DET1D SID, which routes to 7,000ft via the north-western side of the design envelope.</p> <p>Although the current SID already benefits from being an RNP1 design, this option alters the climb gradient of 6% to be consistent with the other options within this envelope. The existing SID is set at 3.3% climb gradient and is restricted in the climb due to airspace constraints.</p> <p>This is the 'do minimum' for SID RW 04 SOUTH-EAST Options.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is a current procedure that is in operation at STN and has been approved for use by the CAA, although it is not compliant with PANS Ops. It has been used safely for several years and the Post Implementation Review (PIR) supports that this route is operated safely.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation</p>	NOT MET	PARTIAL	MET

Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, is not a PBN route and is not deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, North Weald.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 0. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and so will not overfly any new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNP1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and overflies 3478 existing households, which equates to an approximate population of 9100.</p> <p>Taking account of proposed future development, this impact increases to approximately 4128 households and an approximate population of 10700.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 0 (the 'do minimum' option for this envelope) overflies a total of 21 noise sensitive receptors.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 0, the 'do minimum' option for this envelope, currently overflies a population of approximately 9100 people and 18 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 0 overflies a total of 21 noise sensitive receptors and 650 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 0 is the 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 14.2 SID RW 04 SOUTH-EAST (Current DET1D) Option 1 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 SOUTH-EAST Option 1 [Current DET 1D 8%]		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 1 is included to provide a depiction of the existing DET1D SID which routes to 7,000ft via the north-western side of the design envelope.</p> <p>Although the current SID already benefits from being an RNP1 design, this option alters the climb gradient of 8% to be consistent with the other options within this envelope. The existing SID is set at 3.3% climb gradient and is restricted in the climb due to airspace constraints.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is a current procedure that is in operation at STN and has been approved for use by the CAA, although it is not compliant with PANS Ops. It has been used safely for several years and the Post Implementation Review (PIR) supports that this route is operated safely.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

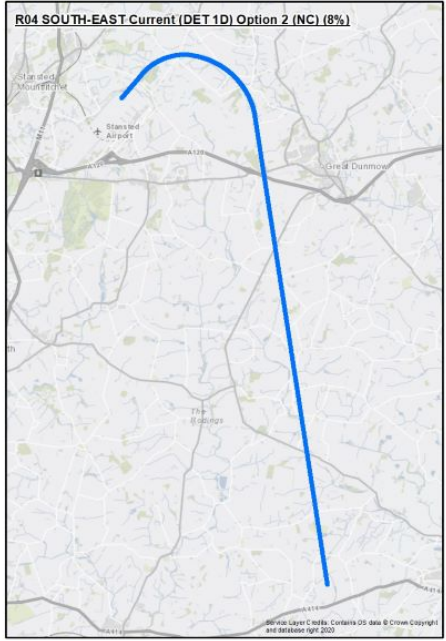
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is not a PBN route and is not deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, North Weald.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNP1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 828 existing households, which equates to an approximate population of 2000. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1478 households and an approximate population of 3700.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 8 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 2000 people and 5 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 1 overflies a total of 8 noise sensitive receptors and 650 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			



## 14.1 SID RW 04 SOUTH-EAST (Current DET1D) Option 2 (8%)

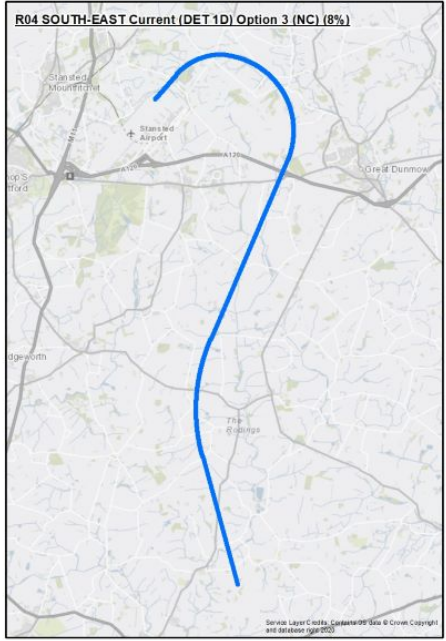
Design Principle Evaluation			
Option Name: SID RW 04 SOUTH-EAST Option 2 [Current DET1D 8%]		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 2 is an RNP1 using RF route at 8%.</p> <p>It follows the same turn as the current SID initially but completes the turn earlier to maintain a south-south easterly track along the eastern edge of the envelope to route more directly towards DET.</p> <p>This results in a track that remains inside of Great Dunmow but results in fewer track miles flown than the current procedure.</p> <p>This option offers a more direct routing towards the DETLING area, and although it aims to turn before Great Dunmow, it flies over High Easter.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 is an amended version of a current procedure that is in operation at STN and has been approved for use by the CAA, although it is not compliant with PANS Ops. It has been used safely for several years and the Post Implementation Review (PIR) supports that this route is operated safely.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 is not a PBN route and is not deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, North Weald.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNP1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 overflies 900 existing households, which equates to an approximate population of 2300. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1800 households and an approximate population of 4600.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2 overflies a total of 7 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 currently overflies a population of approximately 2300 people and 4 noise sensitive buildings.</p> <p>The estimated track length is 34km (18Nm).</p> <p>Option 2 overflies a total of 7 noise sensitive receptors and 900 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

## 14.2 SID RW 04 SOUTH-EAST (Current DET1D) Option 3 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 SOUTH-EAST Option 3 [Current DET1D 8%]		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNP1 using RF route at 8%.</p> <p>It follows the same turn as the current SID initially but turns on to a south-easterly track as far as the village of Aythorpe Rodding. The turn to the south-east is made at this earlier point and the route heads on a south-easterly track to 7,000ft towards the centre of the design envelope, and to the west of High Easter.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 is an amended version of a current procedure that is in operation at STN and has been approved for use by the CAA, although it is not compliant with PANS Ops. It has been used safely for several years and the Post Implementation Review (PIR) supports that this route is operated safely.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

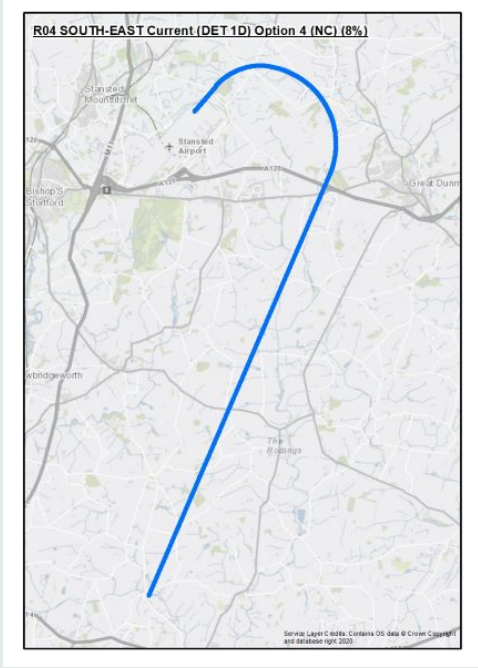
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 is not a PBN route and is not deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Brentwood.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNP1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 overflies 870 existing households, which equates to an approximate population of 2100. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1520 households and an approximate population of 3700.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3 overflies a total of 9 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 currently overflies a population of approximately 2100 people and 6 noise sensitive buildings.</p> <p>The estimated track length is 37km (20Nm).</p> <p>Option 3 overflies a total of 9 noise sensitive receptors and 650 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			



### 14.3 SID RW 04 SOUTH-EAST (Current DET1D) Option 4 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 SOUTH-EAST Option 4 [Current DET1D 8%]	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 4 is an RNP1 using RF route at 8%.</p> <p>It follows the same turn as the current SID initially turns on to a south-westerly track which is continued to the end of the route option at 7,000ft with no turn south. The route terminates on the north-west side of the design envelope at a point abeam the aerodrome at North Weald.</p> <p>It has been designed to avoid overflight of Chipping Ongar and North Weald and has been included as an option to reduce likelihood of interaction with traffic from adjacent airports (LHR and LCY) which is a feature of the current DET departure.</p>			
DP <b>S</b> : Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is an amended version of a current procedure that is in operation at STN and has been approved for use by the CAA, although it is not compliant with PANS Ops. It has been used safely for several years and the Post Implementation Review (PIR) supports that this route is operated safely.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account	NOT MET	PARTIAL	MET

the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is not a PBN route and is not deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, North Weald.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			

<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNP1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 758 existing households, which equates to an approximate population of 1800. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1408 households and an approximate population of 3400.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this Design Principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 6 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			

<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government’s altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 1800 people and 3 noise sensitive buildings.</p> <p>The estimated track length is 39km (21Nm).</p> <p>Option 4 overflies a total of 6 noise sensitive receptors and 650 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a ‘good fit’.</p>			

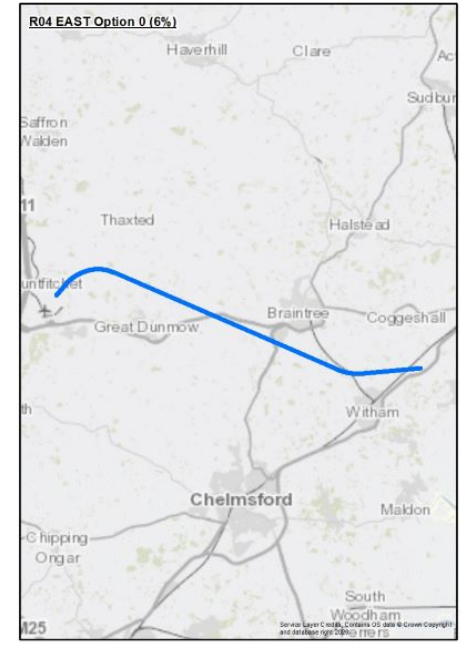
## 14.4 SID RW 04 SOUTH-EAST (Current DET1D) - Viable but Poor Fit Options

Option	Safety	Policy	Demand	Outcome
<b>A5 Left wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make an approximate 270° left-hand turn, flying fully around the airport, and then begin heading Southeast.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				
<b>B6 Right wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make an approximate 500° right-hand turn, flying fully around the airport to gain altitude, and then begin heading South east.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with arriving traffic. As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this</p>				

option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.				
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<b>C7 Extended straight ahead then right</b>	<b>S</b>	<b>P</b>	<b>D</b>	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would fly an extended straight ahead phase and then make a right-hand turn to begin heading southwest back towards DET.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with arriving traffic. As a result this option would not comply with the Safety DP.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				

# 15 SID RW 04 EAST

## 15.1 SID RW 04 EAST Option 0 (6%)

Design Principle Evaluation			
Option Name: SID RW 04 EAST – Option 0 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 0 is included to provide a replication of the existing conventional CLN4S SID utilising PBN technology. It is designed as an RNAV1 and uses fly-by waypoints to follow the track of the existing procedure as closely as possible.</p> <p>Although this route is laterally similar to the existing SID, the higher climb gradient aims to introduce efficiencies.</p> <p>This is the ‘do minimum’ for SID RW 04 EAST Options.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

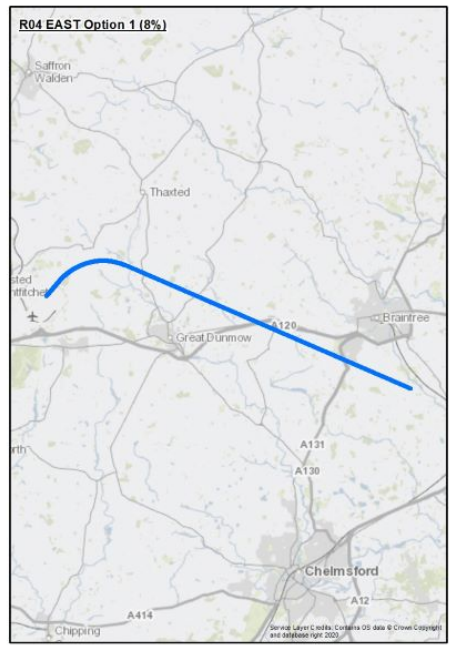
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 0. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and so will not overfly any new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and overflies 6504 existing households, which equates to an approximate population of 16500.</p> <p>Taking account of proposed future development, this impact increases to approximately 14104 households and an approximate population of 35700.</p> <p>It aims to avoid Thaxted straight ahead and Stebbing and Braintree after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 0 (the 'do minimum' option for this envelope) overflies a total of 26 noise sensitive receptors.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, currently overflies a population of approximately 16500 people and 23 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 0 overflies a total of 26 noise sensitive receptors and 7600 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 0 is the 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 15.2 SID RW 04 EAST Option 1 (8%)

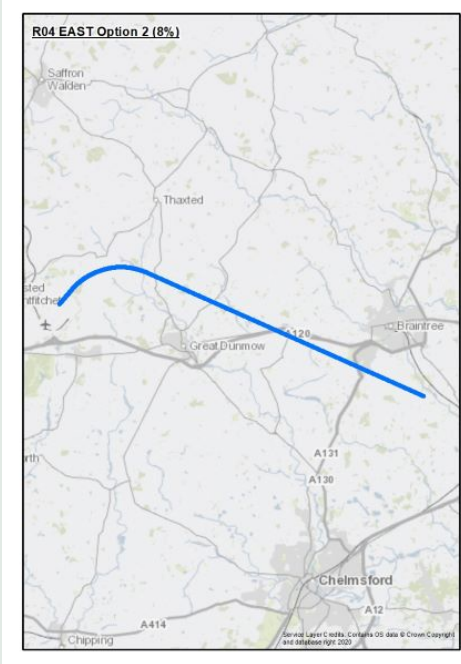
Design Principle Evaluation			
Option Name: SID RW 04 EAST – Option 1 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 1 is included to provide a replication of the existing conventional CLN4S SID utilising PBN technology. It is designed as an RNAV1 route at 8% and uses fly-by waypoints to follow the track of the existing procedure as closely as possible.</p> <p>Although this route is laterally similar to the existing SID, it has a higher climb gradient.</p> <p>After departure this SID turns right and route in an East South East direction to the north of Great Easton and terminates at 7,000ft in the centre of the design envelope to the south of Braintree.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 1 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i> This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 4628 existing households, which equates to an approximate population of 12300. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 7878 households and an approximate population of 20900.</p> <p>It aims to avoid Thaxted straight ahead and Stebbing and Braintree after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 12 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which</p>	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 12300 people and 9 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 1 overflies a total of 12 noise sensitive receptors and 3250 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

### 15.3 SID RW 04 EAST Option 2 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 EAST – Option 2 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 2 is included to provide a replication of the existing CLN4S SID utilising RNP1 with RF turns at 8%.</p> <p>It follows the track of the existing procedure as closely as possible.</p> <p>Although this route is laterally similar to the existing SID, it has a higher climb gradient.</p> <p>After departure this SID turns right and route in an East South East direction to the north of Great Easton and terminates at 7,000ft in the centre of the design envelope to the south of Braintree.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO</p>			

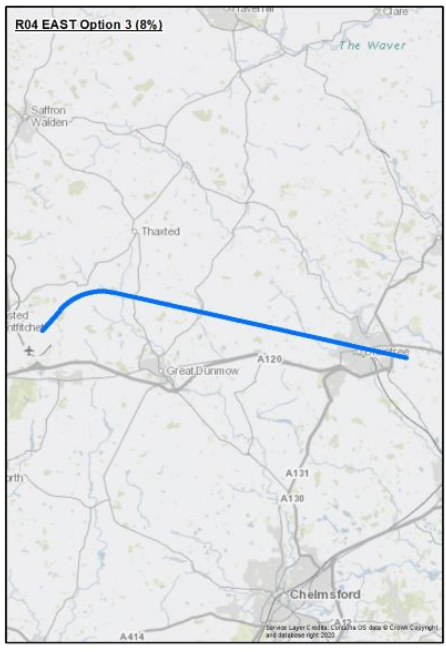
<p>operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>This option has been designed as an RNP1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 overflies 4928 existing households, which equates to an approximate population of 13100. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 9128 households and an approximate population of 24200.</p> <p>The route aims to avoid Thaxted straight ahead and Stebbing and Braintree after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2 overflies a total of 12 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 currently overflies a population of approximately 13100 people and 9 noise sensitive buildings.</p> <p>The estimated track length is 30km (16Nm).</p> <p>Option 2 overflies a total of 12 noise sensitive receptors and 4200 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

## 15.4 SID RW 04 EAST Option 3 (8%)

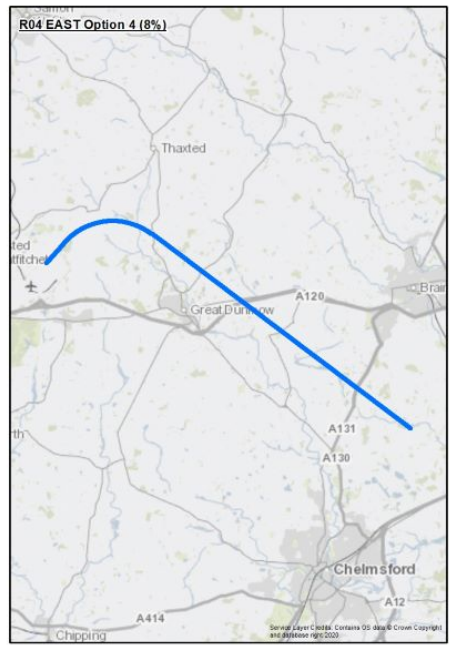
Design Principle Evaluation			
Option Name: SID RW 04 EAST – Option 3 (8%)			REJECT
<p><i>Option Description:</i></p> <p>This option is an RNAV1 route using fly-by waypoints at 8%.</p> <p>It follows the same initial turn as the current route but maintains an easterly track along the northern edge of the envelope.</p> <p>This option has been developed as a slightly more direct route to exit UK airspace and may also offer the potential as a noise relief route when combined with options that route to the south of the design envelope.</p> <p>It avoids overflight of Thaxted, and flies to the north of both Stebbing and Great Dunmow, but flies close to Great Saling and the northern part of Braintree.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 3 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNP1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 overflies 18843 existing households, which equates to an approximate population of 43500. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 37143 households and an approximate population of 85600.</p> <p>The route aims to avoid overflight of large built-up areas although this option flies close to Braintree before routing to a network joining point consistent with the existing conventional SID.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3 overflies a total of 53 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's</p>	NOT MET	PARTIAL	MET

altitude-based priorities, which emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 currently overflies a population of approximately 43500 people and 51 noise sensitive buildings.</p> <p>The estimated track length is 28km (15Nm).</p> <p>Option 3 overflies a total of 53 noise sensitive receptors and 18300 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

## 15.5 SID RW 04 EAST Option 4 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 EAST – Option 4 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNAV1 route using fly-by waypoints at 8%.</p> <p>The first turn commences at the same point as other options but continues this turn to follow a track towards the extreme southern edge of the envelope to the south of Braintree.</p> <p>This route has been created to provide noise relief (when compared to the replicated route) for Braintree and Great Notley and may also offer the potential as a noise relief route when combined with options that route to the north of the design envelope.</p> <p>The track routes to the north of Great Dunmow, and avoids Braintree and Great Notley, but overflies Felsted and Great Leighs.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

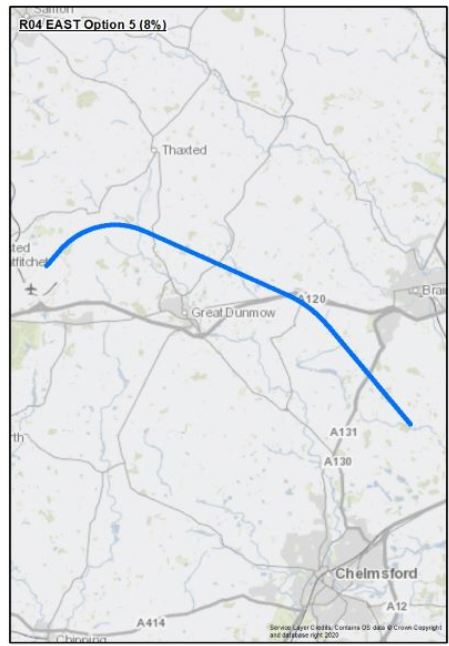
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET



facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 2940 existing households, which equates to an approximate population of 7800. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 5540 households and an approximate population of 14700.</p> <p>The route aims to avoid overflight of large built-up areas before routing to a network joining point consistent with the existing conventional SID.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 22 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike	NOT MET	PARTIAL	MET

<p>the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 7800 people and 19 noise sensitive buildings.</p> <p>The estimated track length is 32km (17Nm).</p> <p>Option 4 overflies a total of 22 noise sensitive receptors and 2600 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

## 15.6 SID RW 04 EAST Option 5 (8%)

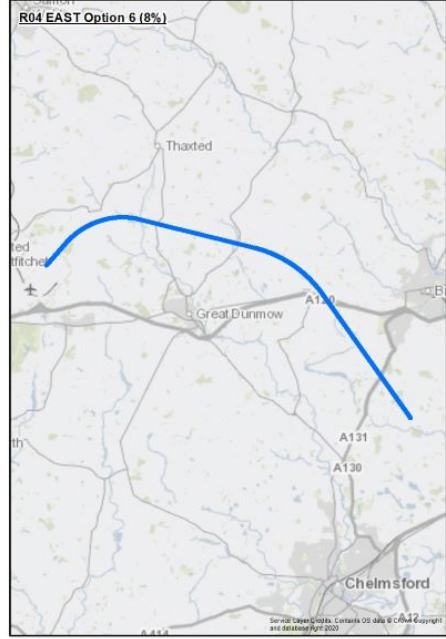
Design Principle Evaluation			
Option Name: SID RW 04 EAST – Option 5 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is designed utilising RNP1 with RF turns at 8%.</p> <p>It follows the same initial turn and track as the current route but turns to the right when the track is abeam Great Leighs Racecourse.</p> <p>This takes it to the south of Great Notley and Braintree to route towards the southern edge of the design envelope.</p> <p>It has been designed following previous stakeholder feedback to seek ways to reduce noise in the area to the south and west of Braintree resulting from the increased traffic on the current CLN SID (following LAMP1A).</p> <p>This option is a viable RNP1 alternative utilising the latest technology. It aims to balance efficiency with avoiding overflight of sensitive areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNP1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 overflies 2171 existing households, which equates to an approximate population of 5700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 5871 households and an approximate population of 15400.</p> <p>The route aims to avoid overflight of large built-up areas before routing to a network joining point consistent with the existing conventional SID.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 5 overflies a total of 10 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike	NOT MET	PARTIAL	MET

<p>the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 currently overflies a population of approximately 5700 people and 6 noise sensitive buildings.</p> <p>The estimated track length is 32km (17Nm).</p> <p>Option 5 overflies a total of 10 noise sensitive receptors and 3700 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

## 15.7 SID RW 04 EAST Option 6 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 EAST – Option 6 (8%)		REJECT	
<p><i>Option Description:</i></p> <p>Option 6 is designed utilising RNP1 with RF turns at 8%.</p> <p>It commences the turn in the same position as the current route but maintains an easterly track along the northern edge of the envelope until north of Stebbing. It then commences an RF turn to the right and routes to the south of the envelope which takes it to the south of Great Notley and Braintree.</p> <p>It has been designed following previous stakeholder feedback to seek ways to reduce noise in the area to the south and west of Braintree resulting from the increased traffic on the current CLN SID (following LAMP1A).</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 6 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, CLN (the existing point).</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 6. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNP1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 overflies 1837 existing households, which equates to an approximate population of 4800. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 15837 households and an approximate population of 41800.</p> <p>The route aims to avoid overflight of large built-up areas before routing to a network joining point consistent with the existing conventional SID. At the time of writing, this option would overfly four newly proposed housing sites.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 6 overflies a total of 8 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will</p>	NOT MET	PARTIAL	MET

<p>take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 currently overflies a population of approximately 4800 people and 4 noise sensitive buildings.</p> <p>The estimated track length is 33km (18Nm).</p> <p>Option 6 overflies a total of 8 noise sensitive receptors and 14000 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 6 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternative design options with a lesser climb gradient of 6%, that will allow for the operation of these aircraft, on at least some routes. This option could be used as part of a network that is consistent with this Design Principle, and so we consider it a 'good fit'.</p>			

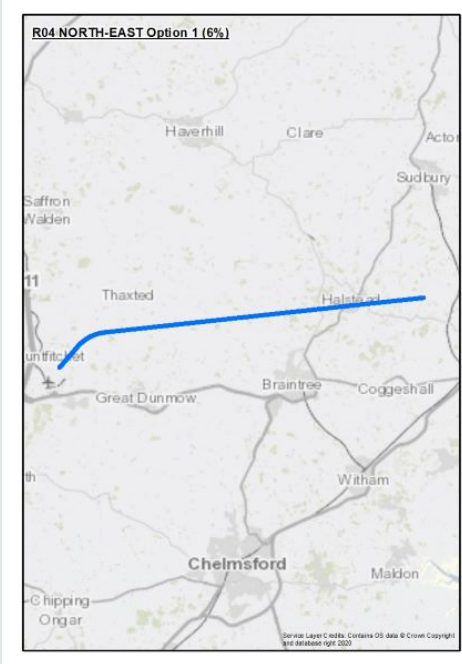
## 15.8 SID RW 04 EAST - Viable but Poor Fit Options

Option	Safety	Policy	Demand	Outcome
<b>A7 Left wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make an approximate 300° left-hand turn, flying fully around the airport, and then begin heading East.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				
<b>B8 Right wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make a 450° right-hand turn, flying fully around the airport, and then begin heading East.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this</p>				

option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.				
<b>C9 Extended straight ahead then right</b>	<b>S</b>	<b>P</b>	<b>D</b>	Viabale but Poor Fit
<p>After departure from RWY 04, aircraft would continue straight ahead for longer and then make a right-hand turn towards the East.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for impact on the subsequent departures from STN, limiting capacity and runway throughput. This would result in aircraft being held for departure for longer, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p> <p>It must also be noted that part of this option ventures outside the existing design envelope.</p>				

# 16 SID RW 04 NORTH-EAST

## 16.1 SID RW 04 NORTH-EAST Option 1 (6%)

Design Principle Evaluation			
Option Name: SID RW 04 NORTH-EAST – Option 1 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNAV1 route at 6% that uses fly-by waypoints to follow a direct track towards the centre of the design envelope.</p> <p>The initial turn after departure avoids Thaxted by routing to the south and then continues on a track to the centre of the design envelope passing overhead Halstead. This offers a direct track to leave UK airspace at REDFA.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p>Summary of Qualitative Assessment:</p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

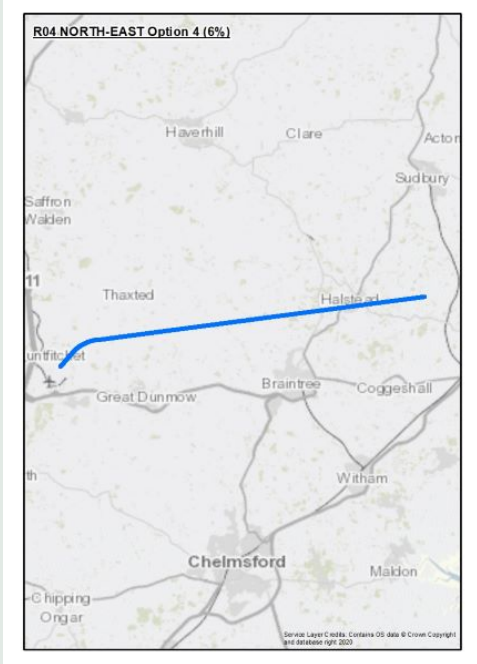
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, COLNE.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 8510 existing households, which equates to an approximate population of 18900. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 11360 households and an approximate population of 25200.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 43 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 18900 people and 40 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 1 overflies a total of 43 noise sensitive receptors and 2850 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			



## 16.2 SID RW 04 NORTH-EAST Option 4 (6%)

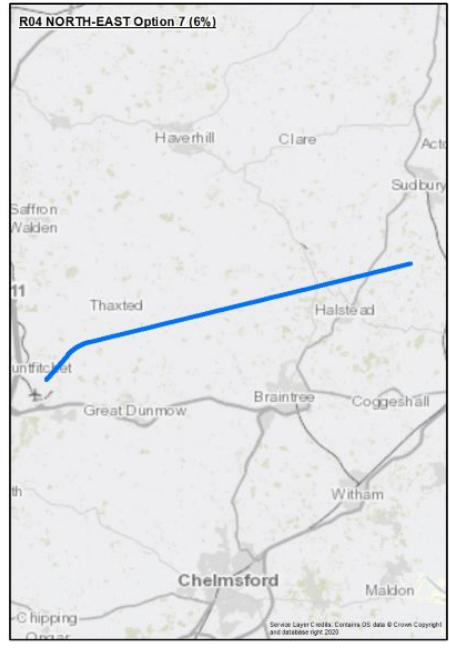
Design Principle Evaluation			
Option Name: SID RW 04 NORTH EAST – Option 4 (6%)	ACCEPT		
<p><i>Option Description:</i></p> <p>This option is an <b>RNAV1</b> route at 6% that utilises fly-by waypoints.</p> <p>This option also flies a direct track towards the centre point of the design envelope but features the earliest possible turn after departure. This has been provided to improve runway utilisation/reduce delays to subsequent departures on other routes.</p> <p>The initial turn after departure avoids Thaxted by routing to the south and then continues on a track to the centre of the design envelope passing overhead Halstead.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, COLNE.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous</p>	NOT MET	PARTIAL	MET

climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 8435 existing households, which equates to an approximate population of 18700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 11285 households and an approximate population of 24900.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 44 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the	NOT MET	PARTIAL	MET

Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 18700 people and 40 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 4 overflies a total of 44 noise sensitive receptors and 2850 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

### 16.3 SID RW 04 NORTH-EAST Option 7 (6%)

Design Principle Evaluation			
Option Name: SID RW 04 NORTH-EAST – Option 7 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNAV1 route at 6% using fly-by waypoints.</p> <p>It features the same initial turn as option 1 and then routes along the northern edge of the design envelope.</p> <p>The initial turn avoids Thaxted and this option has been designed to route to avoid the direct overflight of Halstead by routing to the north of the town.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

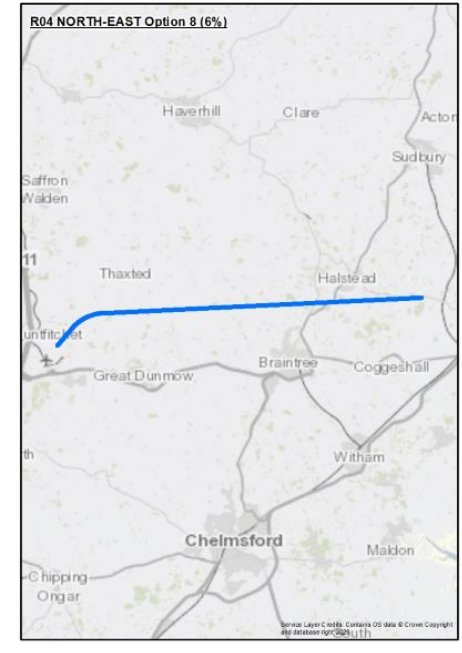
<p>Option 7 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, COLNE.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 7. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7 overflies 1859 existing households, which equates to an approximate population of 4300. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2009 households and an approximate population of 4700.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 7 overflies a total of 17 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 7 currently overflies a population of approximately 4300 people and 16 noise sensitive buildings.</p> <p>The estimated track length is 39km (21Nm).</p> <p>Option 7 overflies a total of 17 noise sensitive receptors and 150 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 7 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			



## 16.4 SID RW 04 NORTH-EAST Option 8 (6%)

Design Principle Evaluation			
Option Name: SID RW 04 NORTH-EAST – Option 8 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNAV1 route at 6% using fly-by waypoints.</p> <p>It features the same initial turn as option 1 and then routes slightly to the south to terminate towards the southern edge of the design envelope.</p> <p>The initial turn avoids Thaxted and this option has been designed to route to avoid the direct overflight of Halstead by routing to the south of the town.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 8 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, COLNE.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 8. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>At this stage, we believe this route option is able to operate independently from the holds and arrival and departure routes of adjacent airports, although further assessment may be required to confirm this. Assessment against new arrival routes at STN has not yet taken place. The route does not require access to airspace belonging to adjacent airports. Further assessment is required to fully determine whether this route option will support the demand requirements of STN.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This option has been designed as an RNAV1 option and is considered flyable. At this stage, since the route is examined in isolation, it is considered to enable a continuous climb.</p>			

<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 overflies 4131 existing households, which equates to an approximate population of 9500. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 5431 households and an approximate population of 12500.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 8 overflies a total of 22 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 currently overflies a population of approximately 9500 people and 17 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 8 overflies a total of 22 noise sensitive receptors and 1300 proposed dwelling(s).</p>			

<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 8 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

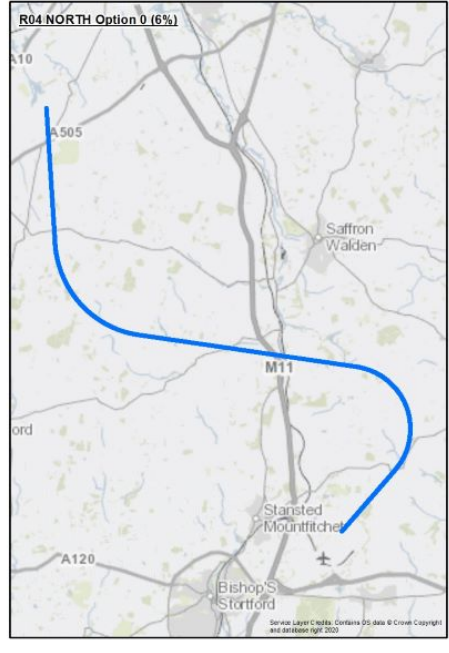
## 16.5 SID RW 04 NORTH-EAST - Viable but Poor Fit Options

Option	Safety	Policy	Demand	Outcome
<b>A5 Left wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make an approximately 300° left-hand turn, fly fully around the airport, and then begin heading Northeast.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				
<b>B6 Right wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make an approximately 400° right-hand turn, flying fully around the airport, and then begin heading North East.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this</p>				

option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.				
<b>C7 Extended straight ahead then right</b>	<b>S</b>	<b>P</b>	<b>D</b>	Viabile but Poor Fit
<p>After departure from RWY 04, aircraft would continue straight ahead for longer and then make a right-hand turn towards the North East.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p>It is also acknowledged that there may be some interaction with the adjacent East Anglia Military Training Area and arrivals to Luton, but at this stage this interaction is unclear.</p>				

# 17 SID RW 04 NORTH

## 17.1 SID RW 04 NORTH Option 0 (6%)

Design Principle Evaluation			
Option Name: SID RW 04 NORTH – Option 0 (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 0 is an RNAV1 departure that uses fly-by waypoints to create a PBN replication of the existing conventional BKY2S SID.</p> <p>This route is laterally similar to the existing SID, but with a climb gradient of 6%. The existing published SID has a climb gradient of 3.3%, but all other options within this envelope have been designed with a climb gradient of 8%.</p> <p>After departure the initial turn is to the north west with a second turn to the north to route to the centre of the design envelope.</p> <p>This is the 'do minimum' for SID RW 04 NORTH Options.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

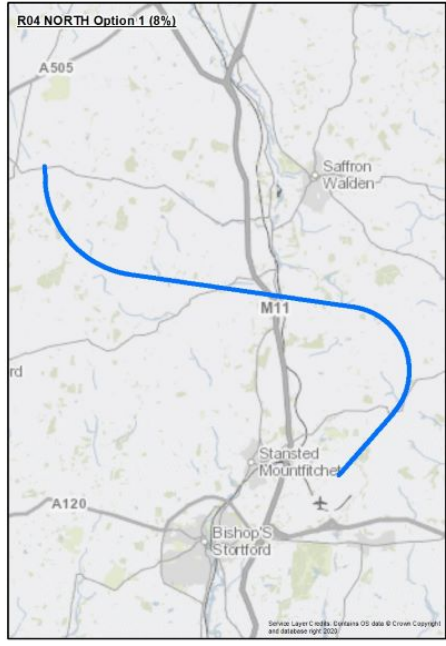
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 0. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and so will not overfly any new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i></p> <p>This route is designed as RNAV1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0 is the 'do minimum' option for this envelope and overflies 1547 existing households, which equates to an approximate population of 3900.</p> <p>Taking account of proposed future development, this impact increases to approximately 1647 households and an approximate population of 4200.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 0 (the 'do minimum' option for this envelope) overflies a total of 14 noise sensitive receptors.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 0, the 'do minimum' option for this envelope, currently overflies a population of approximately 3900 people and 12 noise sensitive buildings.</p>			

<p>The estimated track length is 41km (22Nm).</p> <p>Option 0 overflies a total of 14 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 0 is the 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 17.2 SID RW 04 NORTH Option 1 (8%)

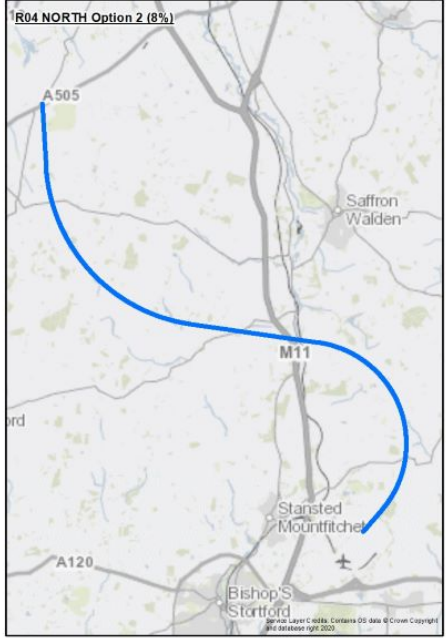
Design Principle Evaluation				
Option Name: SID RW 04 NORTH – Option 1 (8%)	REJECT			
<p><i>Option Description:</i></p> <p>Option 1 is an RNAV1 departure that uses fly-by waypoints to create a PBN replication of the existing conventional BKY2S SID.</p> <p>This route is laterally similar to the existing SID, but with an increased climb gradient (8%) in line with other options in this envelope.</p> <p>After departure the initial turn is to the north west with a second turn to the north to route to the centre of the design envelope.</p>				
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	<table border="1" style="width: 100%;"> <tr> <td style="width: 33%; text-align: center;">NOT MET</td> <td style="width: 33%; text-align: center;">PARTIAL</td> <td style="width: 33%; text-align: center; background-color: #90EE90;">MET</td> </tr> </table>	NOT MET	PARTIAL	MET
NOT MET	PARTIAL	MET		
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>				
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	<table border="1" style="width: 100%;"> <tr> <td style="width: 33%; text-align: center;">NOT MET</td> <td style="width: 33%; text-align: center; background-color: #FFD700;">PARTIAL</td> <td style="width: 33%;"></td> </tr> </table>	NOT MET	PARTIAL	
NOT MET	PARTIAL			
<p><i>Summary of Qualitative Assessment:</i></p>				

<p>Option 1 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route is designed as RNAV1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 1589 existing households, which equates to an approximate population of 4100. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1689 households and an approximate population of 4300.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 9 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 4100 people and 8 noise sensitive buildings.</p>			

<p>The estimated track length is 41km (22Nm).</p> <p>Option 1 overflies a total of 9 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

### 17.3 SID RW 04 NORTH Option 2 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 NORTH – Option 2 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is included to provide a PBN replication of the existing BKY2S SID but as an RNP1 option utilising RF turns at a climb gradient of 8%.</p> <p>After departure the initial turn is to the north west with a second turn to the north to route to the centre of the design envelope.</p> <p>Because of the PANS-OPS criteria for this type of procedure, this option has an earlier first turn than the current conventional SID and for the second turn, the use of RF also results in a slightly different track across the ground.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			


<p>Option 2 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2 overflies 1031 existing households, which equates to an approximate population of 2700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1131 households and an approximate population of 2900.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2 overflies a total of 9 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 2 currently overflies a population of approximately 2700 people and 7 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 2 overflies a total of 9 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 17.4 SID RW 04 NORTH Option 3 (8%)

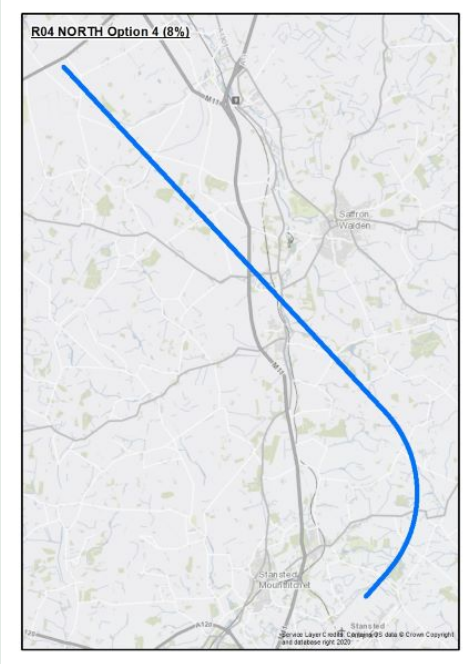
Design Principle Evaluation			
Option Name: SID RW 04 NORTH – Option 3 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNAV1 option at 8% using fly-by waypoints.</p> <p>It has the same first turn as the replicated option but takes a more direct route (that eliminates the double turn of the replicated routes) towards the centre of the design envelope.</p> <p>After the initial left turn north, this option routes to the north west to avoid major towns including Saffron Walden and terminates at 7,000ft to the west of Duxford.</p> <p>This option has been developed to offer a more fuel-efficient route when compared to the replicated option, whilst also avoiding major towns. The position may also create the potential for noise relief if used with options to the west of the envelope.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNAV1, is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3 overflies 688 existing households, which equates to an approximate population of 1700. This is less than the 'do minimum' option.</p> <p>This option does not fly over any proposed developments.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3 overflies a total of 8 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p>Summary of Qualitative Assessment:</p> <p>Option 3 currently overflies a population of approximately 1700 people and 6 noise sensitive buildings.</p> <p>The estimated track length is 34km (18Nm).</p> <p>Option 3 overflies a total of 8 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 17.5 SID RW 04 NORTH Option 4 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 NORTH – Option 4B (6%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNP1 route using RF turns at 8%.</p> <p>It has the earliest possible initial turn after departure and then routes towards the centre of the design envelope.</p> <p>After the first turn to the north, it takes up a direct route in a north westerly direction to avoid major towns including Saffron Walden and routes towards the centre of the letterbox.</p> <p>The earlier turn means that this option provides a more fuel-efficient route when compared to the replicated option and may improve runway utilisation/reduce delays to subsequent departures on other routes.</p> <p>The route also avoids major towns to the west of Saffron Walden.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

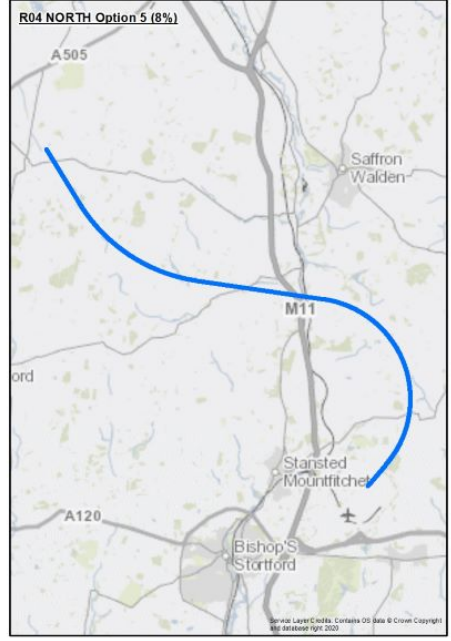
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET



facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 949 existing households, which equates to an approximate population of 2400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 999 households and an approximate population of 2500.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 8 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 2400 people and 5 noise sensitive buildings.</p> <p>The estimated track length is 33km (18Nm).</p> <p>Option 4 overflies a total of 8 noise sensitive receptors and 50 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 17.6 SID RW 04 NORTH Option 5 (8%)


Design Principle Evaluation			
Option Name: SID RW 04 NORTH – Option 5 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This is a RNP1 route using RF turns at 8%.</p> <p>It has the earliest possible initial turn after departure and aligns closely to the replicated option to route towards the west side of the design envelope</p> <p>A second turn is made at Langley Upper Green where it follows a track consistent with the western boundary edge of the.</p> <p>It has been designed as a possible noise relief route when combined with options on the east of the design envelope (Options 3,4 and 6). In addition, the earlier turn may improve runway utilisation/reduce delays to subsequent departures on other routes.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 5 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i> This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflowed.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 overflies 1410 existing households, which equates to an approximate population of 3600. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1510 households and an approximate population of 3800.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 5 overflies a total of 9 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 5 currently overflies a population of approximately 3600 people and 8 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 5 overflies a total of 9 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 17.7 SID RW 04 NORTH Option 6 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 NORTH – Option 6 (8%)		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNP1 route using RF turns at 8%.</p> <p>It has the earliest PANS-OPS compliant turn after departure and then heads along the eastern edge of the design envelope.</p> <p>This option has been created to avoid major towns including Saffron Walden and terminates at 7,000ft in the vicinity of Duxford. In addition, the earlier turn may improve runway utilisation/reduce delays to subsequent departures on other routes.</p> <p>It may also be considered as a possible noise relief route when combined with options on the east of the design envelope.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

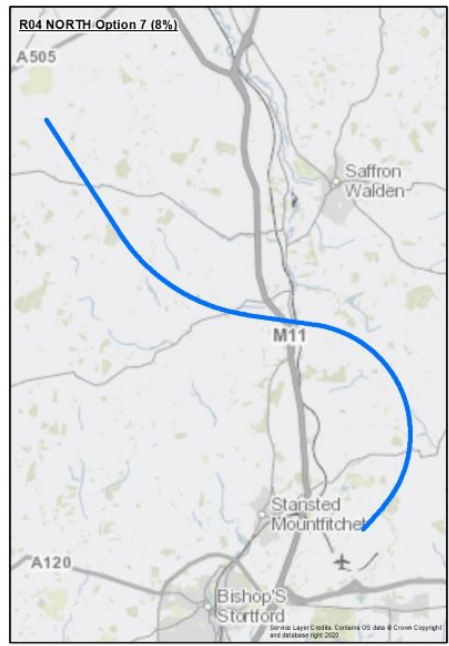
<p>Option 6 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 6. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6 overflies 731 existing households, which equates to an approximate population of 1800. This is less than the 'do minimum' option.</p> <p>This option does not fly over any proposed developments.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 6 overflies a total of 9 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 6 currently overflies a population of approximately 1800 people and 5 noise sensitive buildings.</p> <p>The estimated track length is 32km (17Nm).</p> <p>Option 6 overflies a total of 9 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 6 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 17.8 SID RW 04 NORTH Option 7 (8%)

Design Principle Evaluation			
Option Name: SID RW 04 NORTH – Option 7 (8%)		REJECT	
<p><i>Option Description:</i></p> <p>This option is an RNP1 route using RF turns at 8%.</p> <p>It replicates the first turn after departure but then makes a second turn to the north west to route through the centre of the design envelope and terminates to the SE of Melbourn.</p> <p>It has been designed to avoid Audley End (English Heritage site) and Saffron Walden and was developed considering stakeholder feedback regarding the new housing development proposed at Melbourn.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 7 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, Barkway (BKY).</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 7. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies approximately the same number of noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7 overflies 1330 existing households, which equates to an approximate population of 3400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1430 households and an approximate population of 3700.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 7 overflies a total of 14 noise sensitive receptors.</p> <p>This is approximately the same number as the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 7 currently overflies a population of approximately 3400 people and 13 noise sensitive buildings.</p> <p>The estimated track length is 36km (19Nm).</p> <p>Option 7 overflies a total of 14 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 7 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 8%, it will not be accessible to all aircraft types. However, consistent with this Design Principle, we have designed alternatives with at a lesser climb gradient of 6% that will allow for the operation of these aircraft on at least some routes. This option could be used as part of a network that is consistent within this Design Principle and so we consider it a 'good fit'.</p>			

## 17.9 SID RW 04 NORTH - Viable but Poor Fit Options:

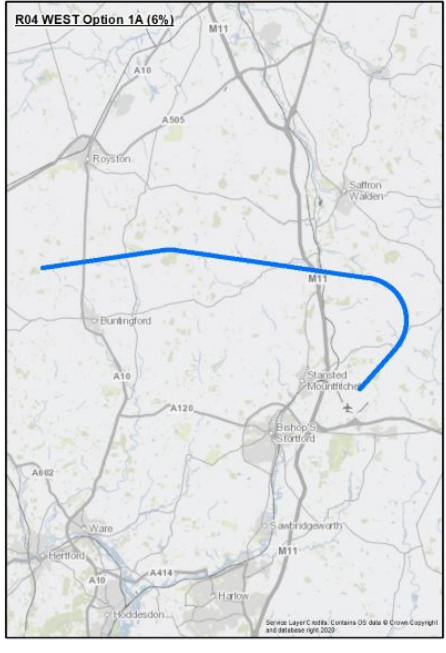
Option	Safety	Policy	Demand	Outcome
<b>A8 Left wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make a left-hand turn, fly 450° around the airport, and then begin heading North.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				
<b>B9 Right wraparound.</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make a 270° right-hand turn, fly around the airport, and then begin heading North.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this</p>				

option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.				
<b>C10 Extended straight ahead then left</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would continue straight ahead for longer and then make a left-hand turn before making another left-hand turn towards the North west and the North.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p>It must also be noted that part of this option ventures outside the existing design envelope.</p>				
<b>D11 Follow the M11 to the North</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would continue straight ahead for longer and then seek to intercept the lateral path of the M11 motorway and use this as a feature to guide the track to 7,000ft.</p> <p>This option was highlighted as part of stakeholder feedback in engagement as a means to reduce noise to the North.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. Analysis of this option showed that following the M11 precisely would be impractical and not in line with PANS-OPS when the rules regarding the Minimum Stabilization Distance (MSD) are applied. As a result this option would not comply with the Safety DP.</p> <p>Alternative options have been created that seek to minimise noise impact in this area.</p>				



# 18 SID RW 04 WEST

## 18.1 SID RW 04 WEST Option 1A (6%)

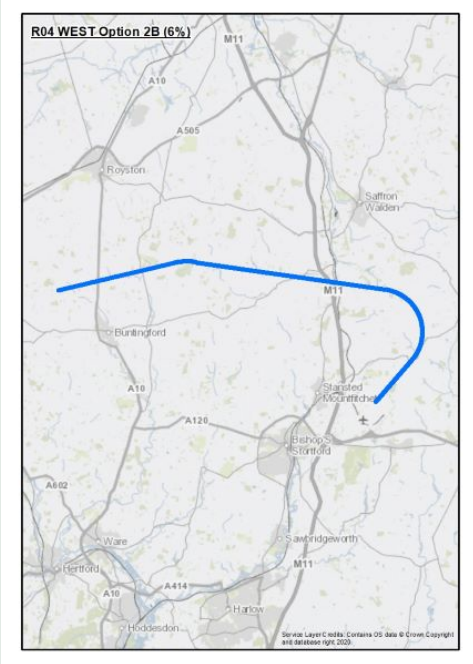
Design Principle Evaluation			
Option Name: SID RW 04 WEST – Option 1A		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNAV1 route at 6% that uses fly by waypoints to create an replication of the existing conventional SID to UTAVA.</p> <p>As a replicated route it follows a similar track over the ground as the current published route and connects to the NATS network at the existing UTAVA fix. However, this places it to the extreme south of the envelope on a heading that does not align with the en-route structure, which routes to the NW.</p> <p>This is the 'do minimum' for SID RW 04 WEST A Options.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1A is a 'do minimum' option for this envelope and has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1A, a 'do minimum' option for this envelope, is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1A. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1A is a 'do minimum' option for this envelope and so will not overfly any new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route option is designed as RNAV1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1A is a replication route and is considered to be the 'do minimum' option for WEST options to UTAVA. This route aims to avoid Thaxted straight ahead and Newport after the first turn.</p> <p>Option 1A overflies 1233 existing households, which equates to an approximate population of 3100.</p> <p>Taking account of proposed future development, this impact increases to approximately 1333 households and an approximate population of 3400.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1A (a 'do minimum' option for this envelope) overflies a total of 7 noise sensitive receptors.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 1A, a 'do minimum' option for this envelope, currently overflies a population of approximately 3100 people and 5 noise sensitive buildings.</p> <p>The estimated track length is 40km (22Nm).</p> <p>Option 1A overflies a total of 7 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1A is a 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 18.2 SID RW 04 WEST Option 2B (6%)

Design Principle Evaluation			
Option Name: SID RW 04 WEST – Option 2B		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNAV1 route at 6% that uses fly by waypoints to create a replication of the existing conventional SID to NUGBO</p> <p>As a replicated route it follows a similar track over the ground as current route and connects to the NATS network at the existing NUGBO fix. After departure the route has a left turn with a track along the north edge of the envelope, before turning left and terminating at 7,000ft in the centre of the envelope.</p> <p>Because it does not route on a direct track to NUGBO after the first turn it does optimise the track miles flown. Furthermore, this route is used by aircraft flying to southern European destinations and the requirement to head north before being able to turn southbound requires additional route miles to be flown that are not fuel efficient.</p> <p>This is the 'do minimum' for SID RW 04 WEST B Options.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2B is a 'do minimum' option for this envelope and has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

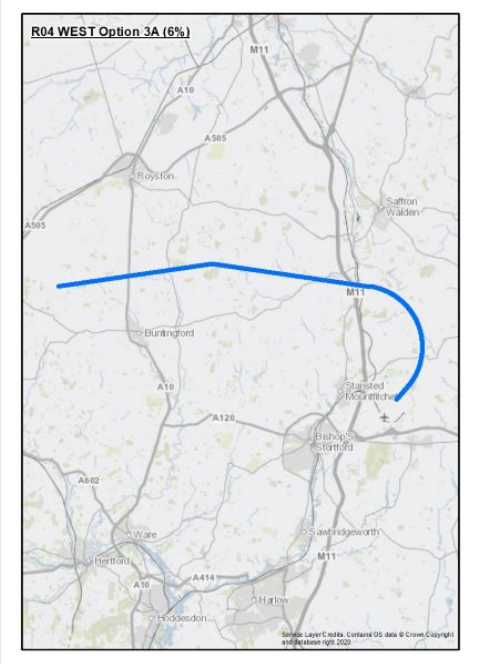
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2B, a 'do minimum' option for this envelope, is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, NUGBO.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2B. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2B is a 'do minimum' option for this envelope and so will overfly some new areas.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNAV1, is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2B is a replication route and is considered to be the 'do minimum' option for WEST options to NUGBO. This route aims to avoid Thaxted straight ahead and Newport after the first turn.</p> <p>Option 2B overflies 1064 existing households, which equates to an approximate population of 2700.</p> <p>Taking account of proposed future development, this impact increases to approximately 1164 households and an approximate population of 3000.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2B (a 'do minimum' option for this envelope) overflies a total of 7 noise sensitive receptors.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2B, a 'do minimum' option for this envelope, currently overflies a population of approximately 2700 people and 5 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 2B overflies a total of 7 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2B is a 'do minimum' option for this envelope and is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			



### 18.3 SID RW 04 WEST Option 3A (6%)

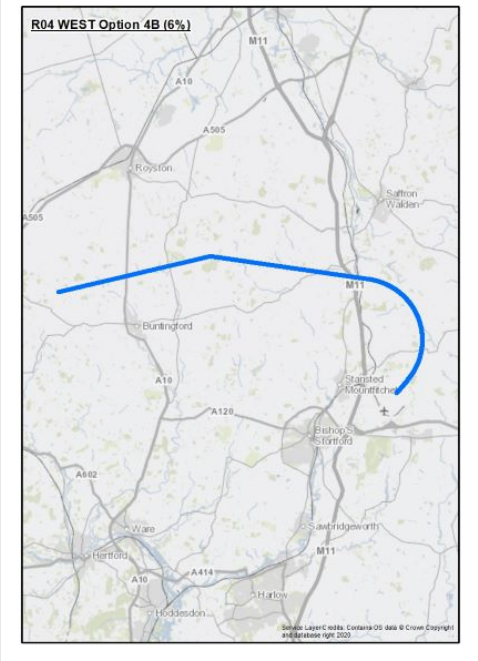
Design Principle Evaluation			
Option Name: SID RW 04 WEST – Option 3A		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNP1 with RF turns at 6% route to create a replication of the existing conventional SID to UTAVA.</p> <p>As a replicated route it follows a similar track over the ground as current conventional route and connects to the NATS network at the existing UTAVA fix.</p> <p>The main difference to the current procedure is that the initial turn after departure is slightly west of the current conventional route (i.e. slightly earlier). This is due to the PANS-OPS rules for an RF turn.</p> <p>The route connects to the NATS network at the existing UTAVA fix. However, this places it to the extreme south of the envelope on a heading that does not align with the en-route structure, which routes to the NW.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3A has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3A is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 3A. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3A will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies approximately the same number of noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 3A overflies 1124 existing households, which equates to an approximate population of 2800. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1224 households and an approximate population of 3100.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 3A overflies a total of 7 noise sensitive receptors.</p> <p>This is approximately the same number as the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 3A currently overflies a population of approximately 2800 people and 5 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 3A overflies a total of 7 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 3A is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 18.4 SID RW 04 WEST Option 4B (6%)

Design Principle Evaluation			
Option Name: SID RW 04 WEST – Option 4B		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNP1 using RF route at 6% to create a replication of the existing conventional SID to NUGBO.</p> <p>It follows a similar track over the ground as the current conventional route and connects to the NATS network at the existing NUGBO fix. The main difference to the current procedure is that the initial turn after departure is slightly west of the current conventional route (i.e. slightly earlier). This is due to the PANS-OPS rules for an RF turn.</p> <p>After departure the route has a left turn with a track along the north edge of the envelope, before turning left and terminating at 7,000ft in the centre of the envelope.</p> <p>The route connects to the current NUGBO fix but because it does not route on a direct track to NUGBO after the first turn it does not maximise fuel efficiency. Furthermore, this route is used by aircraft flying to southern European destinations and the requirement to head north before being able to turn southbound requires additional route miles to be flown that are not fuel efficient.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p>			

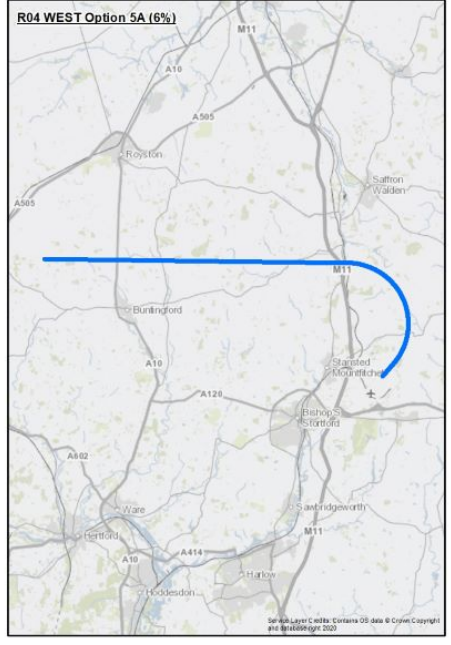
At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4B is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, NUGBO.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4B. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4B will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p>			

<p>Assessed in isolation, it supports CDO/CDA operations. The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> Option 4B overflies 937 existing households, which equates to an approximate population of 2400. This is less than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 1037 households and an approximate population of 2600. The route aims to avoid Thaxted straight ahead and Newport after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>An initial quantitative assessment has identified that Option 4B overflies a total of 6 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4B currently overflies a population of approximately 2400 people and 4 noise sensitive buildings.</p> <p>The estimated track length is 36km (19Nm).</p> <p>Option 4B overflies a total of 6 noise sensitive receptors and 100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			



## 18.5 SID RW 04 WEST Option 5A (6%)

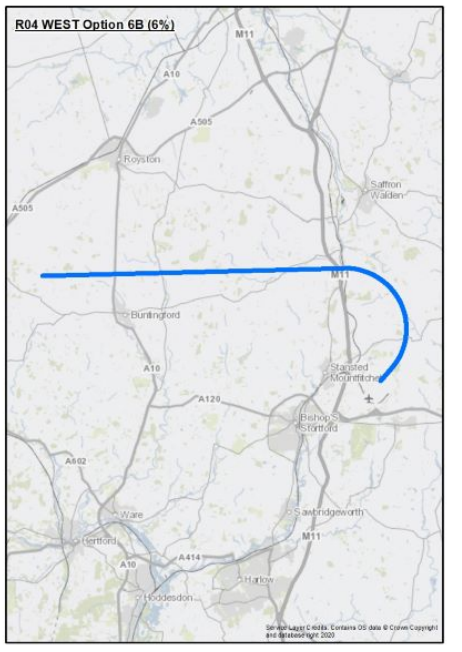
Design Principle Evaluation			
Option Name: SID RW 04 WEST – Option 5A			ACCEPT
<p><i>Option Description:</i></p> <p>This option is an RNP1 using RF turns at 6% route to create a more direct route towards UTAVA.</p> <p>It uses the earliest possible RF turn after departure and tracks towards the southern edge of the design envelope. This initial turn moves the aircraft track slightly west of the current conventional route. It terminates at the southern edge of the design envelope and in a westerly heading which is more aligned to the NATS network beyond 7,000ft.</p> <p>It has been designed to reduce the number of track miles flown and increase fuel efficiency. This is achieved through the removal of the intermediate fix at BKY, which eliminates the need for traffic to fly slightly more to the north. In addition, the earlier RF turn provides an opportunity to improve runway utilisation/reduce delays to subsequent departures on other routes.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5A has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5A is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA .</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5A. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5A will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5A overflies 1053 existing households, which equates to an approximate population of 2700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1053 households and an approximate population of 2700.</p> <p>The route aims to avoid Thaxted straight ahead and Newport after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 5A overflies a total of 10 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-	NOT MET	PARTIAL	MET

based priorities, which emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5A currently overflies a population of approximately 2700 people and 8 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 5A overflies a total of 10 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5A is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 18.6 SID RW 04 WEST Option 6B (6%)

Design Principle Evaluation			
Option Name: SID RW 04 WEST – Option 6B		ACCEPT	
<p><i>Option Description:</i></p> <p>This option is an RNP1 using RF turns at 6%. It has the earliest possible PANS-OPS compliant turn after departure and a more direct route through the centre of the envelope towards NUGBO.</p> <p>It uses the earliest possible RF turn after departure which moves the aircraft track slightly west of the current conventional route. It terminates at the centre of the design envelope and in a westerly heading which is more aligned to the NATS network beyond 7,000ft.</p> <p>It has been designed to reduce the number of track miles flown and increase fuel efficiency. This is achieved through the removal of the intermediate fix at BKY, which eliminates the need for traffic to fly slightly more to the north. In addition, the earlier RF turn provides an opportunity to improve runway utilisation/reduce delays to subsequent departures on other routes.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

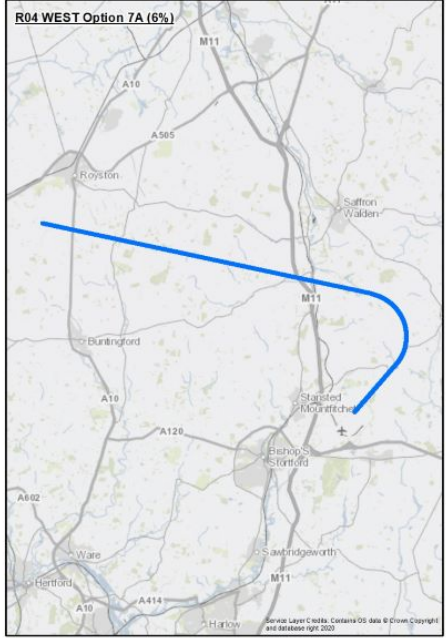
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6B is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 6B. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6B will overfly some new areas.</p> <p>This option overflies the same number of households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6B overflies 1072 existing households, which equates to an approximate population of 2700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1072 households and an approximate population of 2700.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 6B overflies a total of 10 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 6B currently overflies a population of approximately 2700 people and 8 noise sensitive buildings.</p> <p>The estimated track length is 36km (19Nm).</p> <p>Option 6B overflies a total of 10 noise sensitive receptors and 0 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 6B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			



## 18.7 SID RW 04 WEST Option 7A (6%)

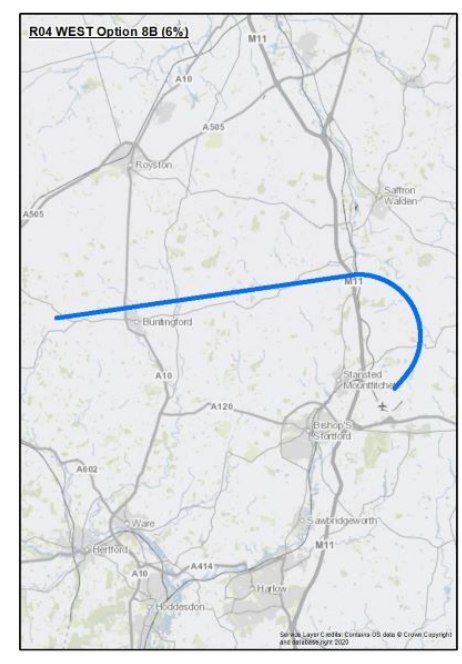
Design Principle Evaluation			
Option Name: SID RW 04 WEST – Option 7A		REJECT	
<p><i>Option Description:</i></p> <p>This option is an RNAV1 route at 6% that uses fly-by waypoints.</p> <p>It takes a wider initial fly by turn than the replicated route Option 1A and routes to the north of the envelope to terminate on a north westerly heading at 7,000ft.</p> <p>It has been designed to place aircraft on a track that is aligned to the NATS network after 7,000ft and also to reduce the potential for interaction with Luton traffic.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7A has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 7A is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 7A. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7A will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route option is designed as RNAV1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7A overflies 2118 existing households, which equates to an approximate population of 5300. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2368 households and an approximate population of 6000.</p> <p>The route aims to avoid Thaxted straight ahead and Newport after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 7A overflies a total of 18 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 7A currently overflies a population of approximately 5300 people and 15 noise sensitive buildings.</p> <p>The estimated track length is 39km (21Nm).</p> <p>Option 7A overflies a total of 18 noise sensitive receptors and 250 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 7A is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 18.8 SID RW 04 WEST Option 8B (6%)

Design Principle Evaluation			
Option Name: SID RW 04 WEST – Option 8B			ACCEPT
<p><i>Option Description:</i></p> <p>This option is an RNP1 using RF turns at 6%.</p> <p>It has the earliest possible turn after departure and then continues this turn to route to the south of the design envelope.</p> <p>This initial turn moves the aircraft track slightly west of the replicated route 2B. It terminates at the southern edge of the design envelope and in a south westerly heading.</p> <p>It has been designed to avoid the direct overflight of Newport and to place aircraft on a track that is more aligned to the NATS network after 7,000ft. In addition, the earlier RF turn provides an opportunity to improve runway utilisation/reduce delays to subsequent departures on other routes.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8B has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S</p>	NOT MET	PARTIAL	MET

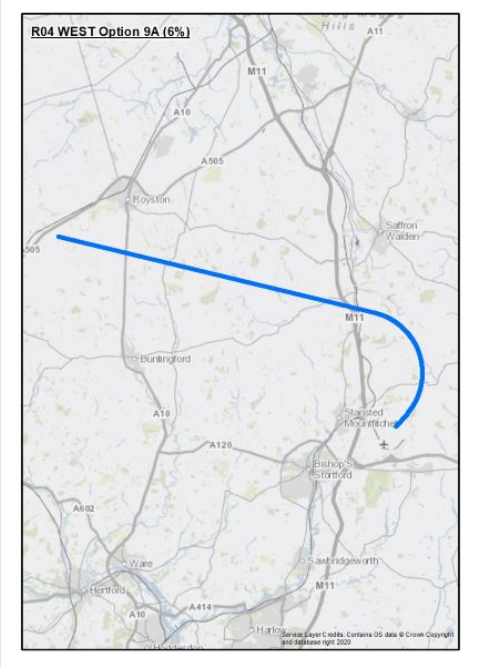
programme, taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8B is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA .</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 8B. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8B will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8B overflies 3624 existing households, which equates to an approximate population of 8900. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 3824 households and an approximate population of 9400.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 8B overflies a total of 12 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8B currently overflies a population of approximately 8900 people and 11 noise sensitive buildings.</p> <p>The estimated track length is 35km (19Nm).</p> <p>Option 8B overflies a total of 12 noise sensitive receptors and 200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 8B is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			



## 18.9 SID RW 04 WEST Option 9A (6%)

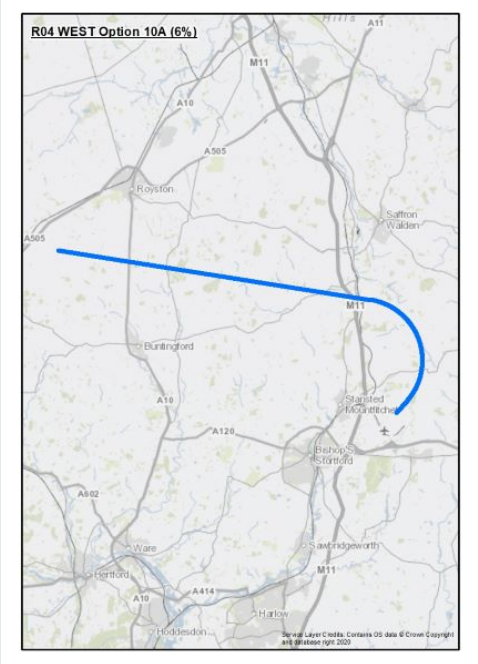
Design Principle Evaluation			
Option Name: SID RW 04 WEST – Option 9A	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 9A is an RNP1 route that utilises RF turns at 6%.</p> <p>It uses the earliest possible RF turn after departure and tracks towards the northern edge of the design envelope. This initial turn moves the aircraft track slightly west of the current conventional route. It terminates at the northern edge of the design envelope and in a north westerly heading.</p> <p>It has been designed to place aircraft on a track that is aligned to the NATS network after 7,000ft and to reduce the potential for interaction with Luton traffic. In addition, the earlier RF turn provides an opportunity to improve runway utilisation/reduce delays to subsequent departures on other routes.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9A has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 9A is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 9A. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9A will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route option is designed as RNP1, is flyable and provides for a continuous climb.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9A overflies 1440 existing households, which equates to an approximate population of 3600. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1690 households and an approximate population of 4200.</p> <p>The route aims to avoid Thaxted straight ahead and Newport after the first turn.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 9A overflies a total of 14 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9A currently overflies a population of approximately 3600 people and 12 noise sensitive buildings.</p> <p>The estimated track length is 36km (19Nm).</p> <p>Option 9A overflies a total of 14 noise sensitive receptors and 250 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 9A is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			

## 18.10 SID RW 04 WEST Option 10A (6%)

Design Principle Evaluation			
Option Name: SID RW 04 WEST – Option 10A		REJECT	
<p><i>Option Description:</i></p> <p>This is an RNP1 option at 6% using RF turns.</p> <p>After departure it uses the earliest possible RF turn and tracks towards the centre of the design envelope. This initial turn moves the aircraft track slightly west of the current conventional route. It terminates in the centre of the design envelope in a north westerly heading.</p> <p>It has been designed to avoid the direct overflight of Newport, to place aircraft on a track that is aligned to the NATS network after 7,000ft and to reduce the potential for interaction with Luton traffic. In addition, the earlier RF turn provides an opportunity to improve runway utilisation/reduce delays to subsequent departures on other routes.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10A has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10A is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It connects to existing structure at, or a point close to, UTAVA.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 10A. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route may be able to operate independently from the arrival transitions and airborne holds expected to be introduced with the AD6 ACP. Further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new arrival routes at STN will be considered at a later stage of the process. The option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10A will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is designed as RNP1, is flyable and provides for a continuous climb.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10A overflies 1314 existing households, which equates to an approximate population of 3300. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 1564 households and an approximate population of 3900.</p> <p>The route aims to avoid Thaxted straight ahead and Newport after the first turn.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 10A overflies a total of 12 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which</p>	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10A currently overflies a population of approximately 3300 people and 11 noise sensitive buildings.</p> <p>The estimated track length is 36km (19Nm).</p> <p>Option 10A overflies a total of 12 noise sensitive receptors and 250 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 10A is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>As this route has been designed at a minimum climb gradient of 6%, it is considered accessible by all aircraft types operating at STN. This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			



## 18.1 SID RW 04 WEST - Viable but Poor Fit Options:

Option	Safety	Policy	Demand	Outcome
<b>A11 West A Left wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make a 450° left-hand turn, fly around the airport, and then begin heading West.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				
<b>B12 West A Right wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make a 270° right-hand turn, flying fully around the airport, and then begin heading North West.</p> <p><b>Safety:</b> The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p><b>Policy:</b> Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p><b>Demand:</b> The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this</p>				

option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.				
<b>C13 West A Extended straight ahead then left.</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would continue straight ahead for longer and then make a gradual left-hand turn towards the West.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p>				
<b>D14 West B Left wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make a 450° left-hand turn, fly around the airport, and then begin heading West.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.</p> <p>Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.</p> <p>Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.</p>				
<b>E15 West B Right wraparound</b>	S	P	D	Viable but Poor Fit
<p>After departure from RWY 04, aircraft would make a 270° right-hand turn, flying fully around the airport, and then begin heading North West.</p> <p>Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between departures and interactions with both arriving traffic</p>				

and traffic on the Missed Approach Procedure (MAP). As a result this option would not comply with the Safety DP.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.

Demand: The Demand DP requires options to provide for the permitted capacity at the airport. This option may not comply with this DP due to the potential for interactions with arrivals. This interaction would lead to ATC intervention and the need for additional separation between flights, resulting in a reduction in movement rates. As a result this option may limit the ability to utilise capacity at the airport and would not comply with the Demand DP.

**F16 West B Extended  
straight ahead then left.**

S

P

D

Viable but Poor  
Fit

After departure from RWY 04, aircraft would continue straight ahead for longer and then make a gradual left-hand turn towards the West.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it involves greater track mileage than is necessary, leading to increased fuel burn and greenhouse gas emissions.

# 19 Standard Instrument Departures Evaluation Summary

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Having applied the pre-constructed criteria detailed in section 4.1, it has been identified 68 SID design options will progress for further consideration.

In accordance with this criterion three additional routes have been identified:

- 22W Option 11B.
- 04W Option 8B.
- 04W Option 9A.
- Whilst provisionally excluded as Options 22W Option 11B performed poorly against the Design Principle Criterion of Noise 1 and Balance and 04W Option 8B and 04W Option 9A performed poorly against the Design Principle Criterion of Change, Noise 1, Noise 3 and Balance they have been identified as options which deconflict from the arrivals design options, where a large number of the potential presentation points of arriving aircraft at 7,000ft are positioned to the North of the 22 WEST and 22 NORTH design envelopes. They also provide further opportunity to deconflict with potential LTN operations.

The Accept/Reject process has identified 20 SID design options to be rejected as they did not qualify against the DPE assessment criteria.

## 20 Transitions Evaluation

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# 21 RW 22 – ‘Do Minimum’ Comparators

## 21.1 RW 22 ‘Do Minimum’ Comparators

In order to evaluate the quantitative aspects of the Noise 1, Noise 3, Balance and Change Design Principles, baseline comparators have been derived from present day vectoring patterns. During a four-month period (01<sup>st</sup> June – 30<sup>th</sup> September 2019), the ‘modal tracks’ in Figures 1 and 2 were identified from STN’s Noise and Track Keeping System (NTK), and represent the tracks most commonly flown by aircraft from 7,000ft to the runway. Quantitative analysis was undertaken to identify the number of households, approximate population, planned property developments and the number of noise sensitive receptors which are overflown by today’s operation.

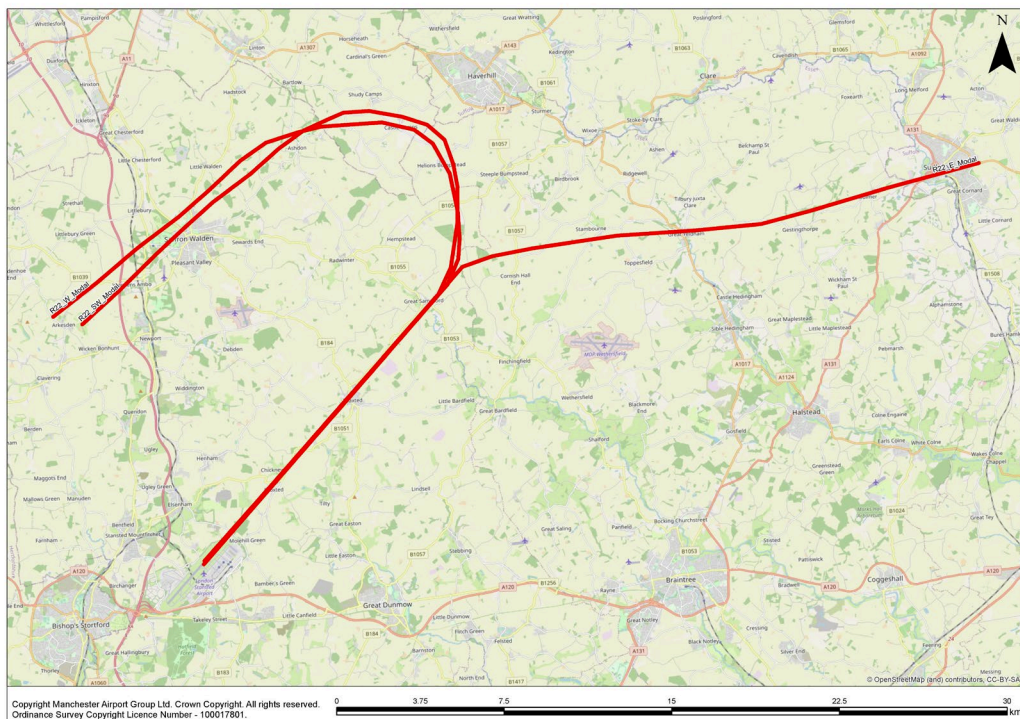


Figure 1 - RW 22 Modal Paths from NTK System

## 21.2 Design Options Presented from the East

Design options presented from the East to RW 22 will be compared with the following quantitative data, denoted by R22\_E\_Modal in Figure 3 above:

This ‘modal track’ overflies 12,911 households, which equates to an approximate population of 28,600.

As of 24th December 2021, we have obtained information regarding three known proposed future development sites which represents approximately 200 proposed dwellings.

An initial quantitative assessment has identified that this 'modal track' overflies 51 noise sensitive buildings, two areas designated as SSSIs but no Country Parks, AONBs or National Parks.

### 21.3 Design Options Presented from the West

Design options presented from the West to RW 22 will be compared with the following quantitative data, denoted by R22\_W\_Modal and R22\_SW\_Modal in Figure 3 above:

This 'modal track' overflies 9,824 households, which equates to an approximate population of 23,000.

As of 24th December 2021, we have obtained information regarding 14 known proposed future development sites which represents approximately 950 proposed dwellings.

An initial quantitative assessment has identified that this 'modal track' overflies 50 noise sensitive buildings, six areas designated as SSSIs but no Country Parks, AONBs or National Parks.

## 22 RW 04 – ‘Do Minimum’ Comparators

### 22.1 RW 04 ‘Do Minimum’ Comparators

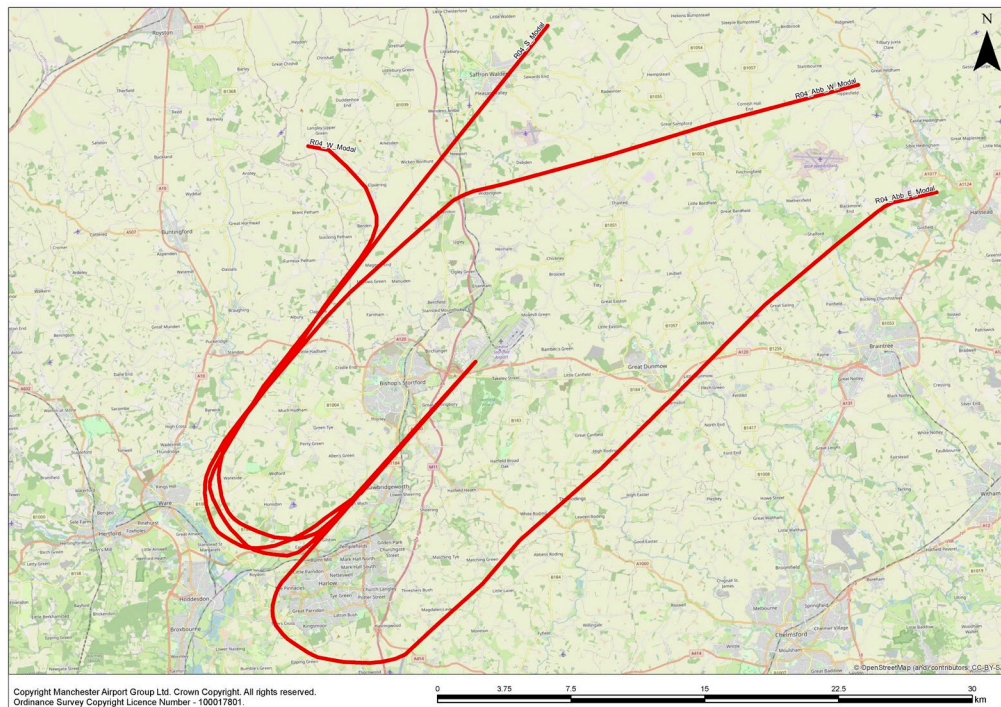


Figure 2 - RW 04 modal paths from NTK system

### 22.2 Design Options Presented from the East

Design options presented from the East to RW 04 will be compared with the following quantitative data, denoted by R04\_Abb\_E\_Modal in Figure 4 above:

This ‘modal track’ overflies 13,778 households, which equates to an approximate population of 34,100.

As of 24th December 2021, we have obtained information regarding 14 known proposed future development sites which represents approximately 11,750 proposed dwellings.

An initial quantitative assessment has identified that this ‘modal track’ overflies 25 noise sensitive buildings, five areas designated as SSSIs, 1 Country Park or AONB but no National Parks.

### 22.3 Design Options Presented from the West

Design options presented from the West to RW 04 will be compared with the following quantitative data, denoted by R04\_W\_Modal, R04\_S\_Modal and R04\_Abb\_W\_Modal in Figure 4 above:



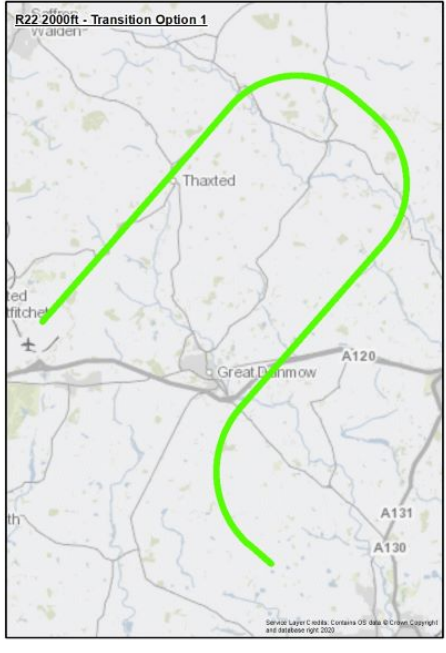
This 'modal track' overflies 13,304 households, which equates to an approximate population of 32,200.

As of 24th December 2021, we have obtained information regarding 20 known proposed future development sites which represents approximately 3,300 proposed dwellings.

An initial quantitative assessment has identified that this 'modal track' overflies 60 noise sensitive buildings, 14 areas designated as SSSIs, one Country Park or AONB but no National Parks.

# 23 RW 22 – 2,000ft Transitions

## 23.1 RW 22 – 2,000ft Transition Option 1

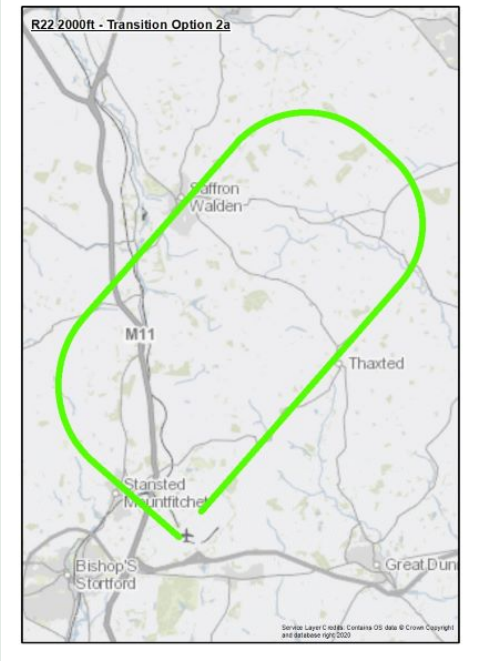
Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 1		REJECT	
<p><i>Option Description:</i></p> <p>Option 1 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables an optimal low noise CDA at 4.6% (2.6°) for both runways.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes west of Braintree. It then turns left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 3879 existing households, which equates to an approximate population of 9900. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 13029 households and an approximate population of 33200.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 26 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 9900 people and 22 noise sensitive buildings.</p> <p>The estimated track length is 47km (25Nm).</p> <p>Option 1 overflies a total of 26 noise sensitive receptors and 9150 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.2 RW 22 – 2,000ft Transition Option 2a

Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 2a		REJECT	
<p><i>Option Description:</i></p> <p>This transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the south east and turn downwind right, and then turn right base onto the final approach.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables an optimal low noise CDA at 4.1% (2.4°) for both runways.</p> <p>From the IAF the route turns north-east onto a downwind track parallel with the final approach and routes over Saffron Walden. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

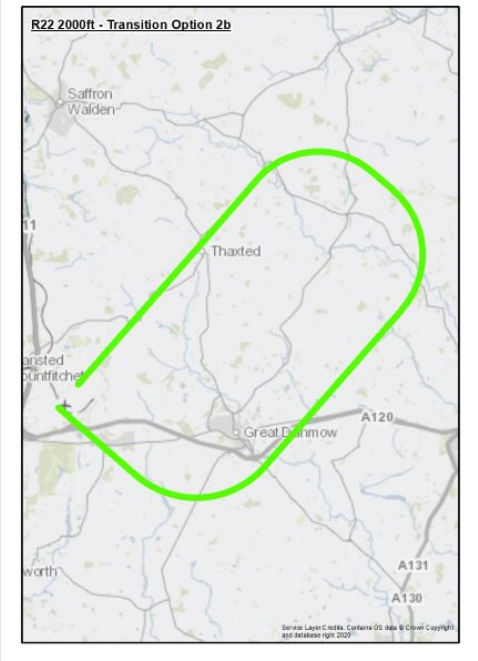
<p>Option 2a is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2a. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route option is a PBN arrival route, is flyable and supports a continuous descent approach.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a overflies 14254 existing households, which equates to an approximate population of 33800. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 16504 households and an approximate population of 39200.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2a overflies a total of 63 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>Option 2a currently overflies a population of approximately 33800 people and 57 noise sensitive buildings.</p> <p>The estimated track length is 51 km (28Nm).</p> <p>Option 2a overflies a total of 63 noise sensitive receptors and 2250 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2a is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

### 23.3 RW 22 – 2,000ft Transition Option 2b

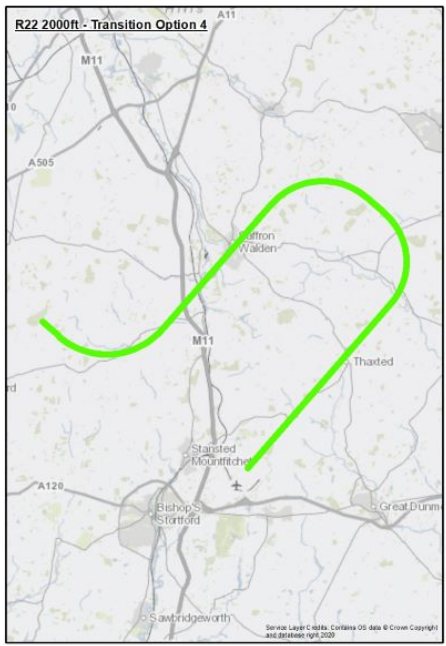
Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 2b		REJECT	
<p><i>Option Description:</i></p> <p>This transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the north west and turn downwind left, and then turn left base onto the final approach.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables an optimal low noise CDA at 4.1% (2.4) for both runways.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes to the east of Great Dunmow and the west of Braintree. It then turns left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
DP <b>S</b> : Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 2b is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2b. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route option is a PBN arrival route, is flyable and supports a continuous descent approach.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b overflies 6274 existing households, which equates to an approximate population of 16000. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 16574 households and an approximate population of 42300.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2b overflies a total of 30 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 2b currently overflies a population of approximately 16000 people and 24 noise sensitive buildings.</p> <p>The estimated track length is 51 km (28Nm).</p> <p>Option 2b overflies a total of 30 noise sensitive receptors and 10300 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2b is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.4 RW 22 – 2,000ft Transition Option 4

Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 4		REJECT	
<p><i>Option Description:</i></p> <p>Option 4 has an IAF at 7,000ft to the north west of the airport which is equidistant to each runway threshold.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables an optimal low noise CDA at 4.6% (2.6°) for both runways.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes close to Saffron Walden. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

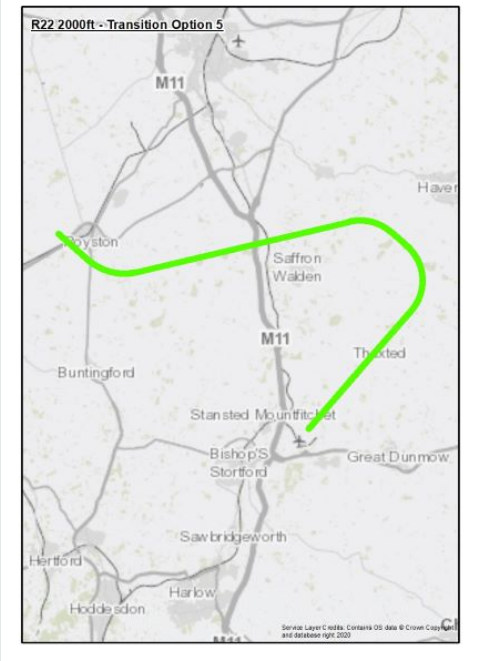
<p>Option 4 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 10863 existing households, which equates to an approximate population of 24400. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 12213 households and an approximate population of 27500.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 53 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>Option 4 currently overflies a population of approximately 24400 people and 47 noise sensitive buildings.</p> <p>The estimated track length is 47km (25Nm).</p> <p>Option 4 overflies a total of 53 noise sensitive receptors and 1350 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.5 RW 22 – 2,000ft Transition Option 5

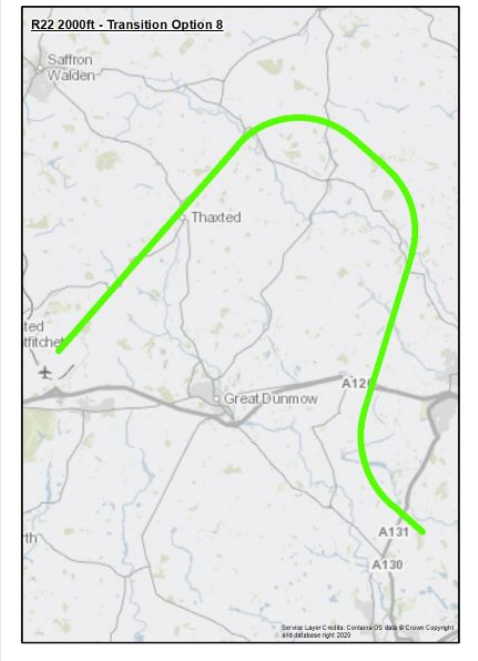
Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 5		REJECT	
<p><i>Option Description:</i></p> <p>Option 5 has an IAF at 7,000ft to the north-west of the airport which is close to the northern element of the current LOREL hold. It has been designed as an option that has minimum change from current operations and may also offer potential for noise relief if combined with Option 12.</p> <p>This IAF introduces longer track miles than previous options and from this position this option enables a CDA at 3.3% (2.2°) which is slightly lower than the optimal gradient for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns east from a position just west of Royston and routes to the north of Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available</p>	NOT MET	PARTIAL	MET

aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 overflies 6474 existing households, which equates to an approximate population of 15100. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 6924 households and an approximate population of 16200.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 5 overflies a total of 46 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 currently overflies a population of approximately 15100 people and 39 noise sensitive buildings.</p> <p>The estimated track length is 53km (29Nm).</p> <p>Option 5 overflies a total of 46 noise sensitive receptors and 450 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.6 RW 22 – 2,000ft Transition Option 8

Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 8	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 8 has an IAF at 7,000ft to the south-east of the airport in the vicinity of Great Leighs.</p> <p>From this position this option enables a CDA at 5.3% (3°) which is at the upper limits for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>This option has slightly fewer track miles for runway 22 operations (than those that are equidistant for both runways), but this results in slightly longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>From the IAF the route turns north and routes to the west of Braintree and then turns left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

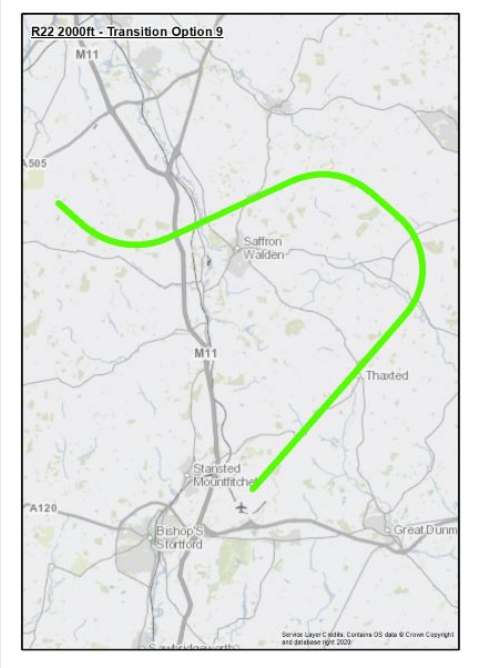
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 8. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 overflies 3249 existing households, which equates to an approximate population of 8100. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 6949 households and an approximate population of 17200.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 8 overflies a total of 21 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET



emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 currently overflies a population of approximately 8100 people and 17 noise sensitive buildings.</p> <p>The estimated track length is 43km (23Nm).</p> <p>Option 8 overflies a total of 21 noise sensitive receptors and 3700 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 8 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.7 RW 22 – 2,000ft Transition Option 9

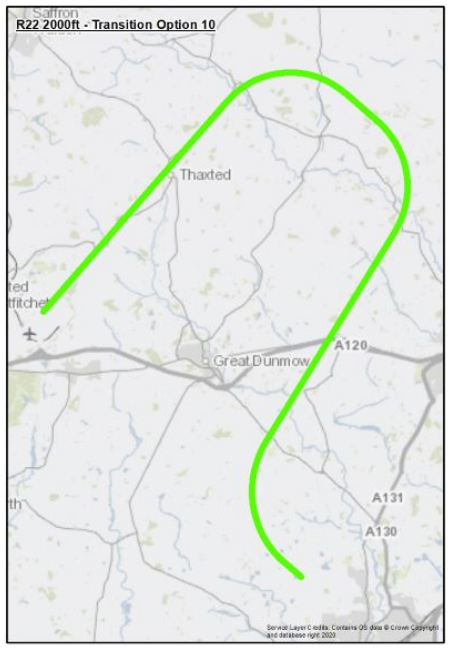
Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 9	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 9 has an IAF at 7,000ft to the north-west of the airport in the vicinity of Heydon.</p> <p>From this position this option enables a CDA at 5.3% (3°), which is at the upper limits for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>This option has slightly fewer track miles for runway 22 operations (than those that are equidistant for both runways), but this results in slightly longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>From the IAF the route turns east and routes to the north of Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 9. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9 overflies 2432 existing households, which equates to an approximate population of 5900. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2632 households and an approximate population of 6400.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 9 overflies a total of 25 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9 currently overflies a population of approximately 5900 people and 20 noise sensitive buildings.</p> <p>The estimated track length is 43km (23Nm).</p> <p>Option 9 overflies a total of 25 noise sensitive receptors and 200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 9 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.8 RW 22 – 2,000ft Transition Option 10

Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 10		REJECT	
<p><i>Option Description:</i></p> <p>Option 10 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold but slightly further south-east than Option 1. It has been designed as an option that offers potential for noise relief if combined with Option 1.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables an optimal low noise CDA at 4.5% (2.6°) for both runways.</p> <p>From the IAF the route turns north-east onto a downwind track and routes further to the east than Option 1 to limit the impact on Great Dunmow and to the west of Braintree. It then turns left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

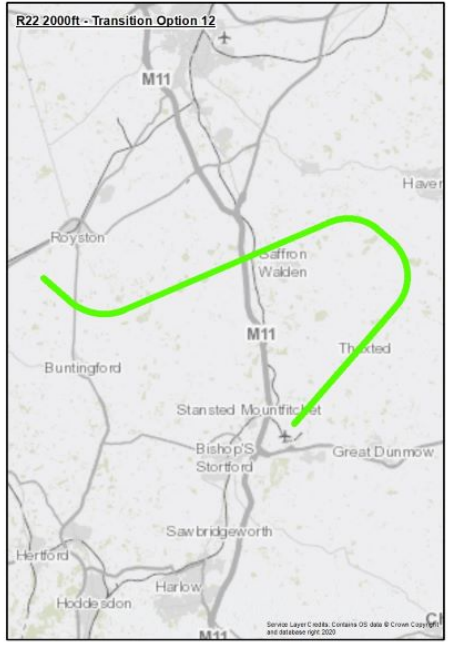
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 10. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 overflies 3972 existing households, which equates to an approximate population of 10100. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 12522 households and an approximate population of 31700.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>"An initial quantitative assessment has identified that Option 10 overflies a total of 33 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.'</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>Option 10 currently overflies a population of approximately 10100 people and 30 noise sensitive buildings.</p> <p>The estimated track length is 48km (26Nm).</p> <p>Option 10 overflies a total of 33 noise sensitive receptors and 8550 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 10 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.9 RW 22 – 2,000ft Transition Option 12

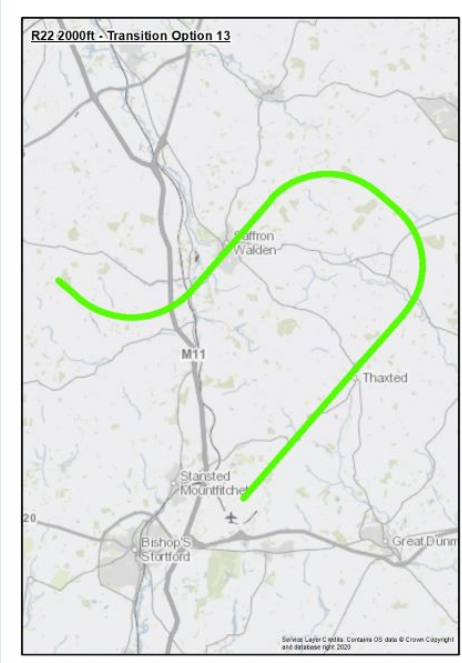
Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 12		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 12 has an IAF at 7,000ft to the north-west of the airport which is close to the southern element of the current LOREL hold. It has been designed as an option that has minimum change from current operations and may also offer potential for noise relief if combined with Option 5.</p> <p>From this position this option enables a CDA at 3.8% (2.2°), which is slightly lower than the optimal gradient for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns east from a position just west of Royston and routes to the north of Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 12. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12 overflies 2815 existing households, which equates to an approximate population of 6900. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2965 households and an approximate population of 7300.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>"An initial quantitative assessment has identified that Option 12 overflies a total of 28 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option."</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 12 currently overflies a population of approximately 6900 people and 24 noise sensitive buildings.</p> <p>The estimated track length is 54km (29Nm).</p> <p>Option 12 overflies a total of 28 noise sensitive receptors and 150 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 12 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.10 RW 22 – 2,000ft Transition Option 13

Design Principle Evaluation		
Option Name: RW 22 – 2,000ft Transition Option 13	REJECT	
<p><i>Option Description:</i></p> <p>Option 13 has an IAF at 7,000ft to the north-west of the airport in the vicinity of Langley Upper Green.</p> <p>From this position this option enables a CDA at 5.2% (3°), which is at the upper limits for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>This option has fewer track miles for runway 22 operations (than those that are equidistant for both runways), but this results in slightly longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>From the IAF the route turns north-east and routes overhead Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>		
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>		MET

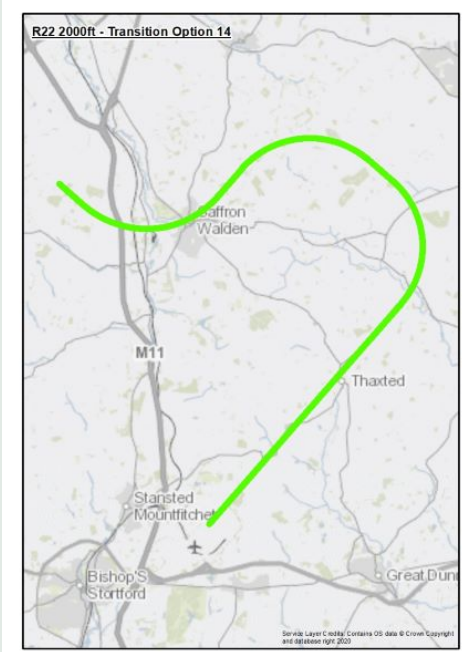
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 13. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			

DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p>Summary of Qualitative Assessment:</p> <p>Option 13 overflies 10381 existing households, which equates to an approximate population of 24400. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 11731 households and an approximate population of 27600.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 13 overflies a total of 52 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will	NOT MET	PARTIAL	MET



<p>take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 currently overflies a population of approximately 24400 people and 46 noise sensitive buildings.</p> <p>The estimated track length is 44km (24Nm).</p> <p>Option 13 overflies a total of 52 noise sensitive receptors and 1350 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 13 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.11 RW 22 – 2,000ft Transition Option 14

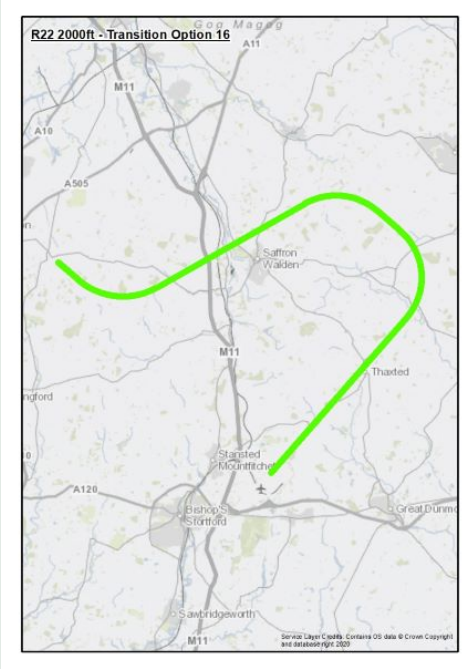
Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 14		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 13 has an IAF at 7,000ft to the north-west of the airport in the vicinity of Langley Upper Green.</p> <p>From this position this option enables a CDA at 5.2% (3°), which is at the upper limits for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>This option has fewer track miles for runway 22 operations (than those that are equidistant for both runways), but this results in slightly longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>From the IAF the route turns north-east and routes overhead Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 14. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 overflies 9111 existing households, which equates to an approximate population of 21300. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 10411 households and an approximate population of 24300.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 14 overflies a total of 44 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 currently overflies a population of approximately 21300 people and 39 noise sensitive buildings.</p> <p>The estimated track length is 39km (21Nm).</p> <p>Option 14 overflies a total of 44 noise sensitive receptors and 1300 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 14 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.12 RW 22 – 2,000ft Transition Option 16

Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 16		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 16 has an IAF at 7,000ft to the north-west of the airport in the vicinity of Great Chishill.</p> <p>From this position this option enables a CDA at 4.7% (2.7°) which is close to the optimal gradient for low noise approaches and within the range for CDAs defined within CAA and ICAO guidance.</p> <p>This option has fewer track miles for runway 22 operations (than those that are equidistant for both runways), but this results in slightly longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>From the IAF the route turns north-east and routes to avoid Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

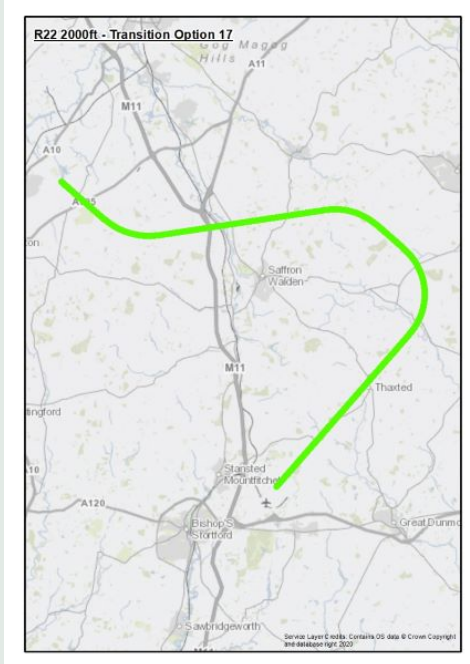
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 16. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 overflies 3137 existing households, which equates to an approximate population of 7600. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 3337 households and an approximate population of 8100.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 16 overflies a total of 25 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET



emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 currently overflies a population of approximately 7600 people and 20 noise sensitive buildings.</p> <p>The estimated track length is 46km (25Nm).</p> <p>Option 16 overflies a total of 25 noise sensitive receptors and 200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 16 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.13 RW 22 – 2,000ft Transition Option 17

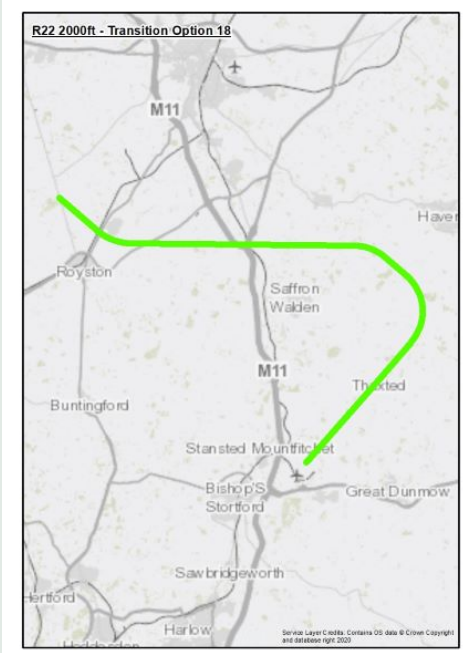
Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 17		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 17 has an IAF at 7,000ft to the north-west of the airport, approx. 1 mile north-east of Melbourn.</p> <p>From this position this option enables a CDA at 4.8% (2.75°), which is slightly above the optimal gradient for low noise approaches but within the range for CDAs defined within CAA and ICAO guidance.</p> <p>This option has fewer track miles for runway 22 operations (than those that are equidistant for both runways), but this results in slightly longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>From the IAF the route turns east and routes south of Ickleton and to the north of Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 17 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 17 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 17. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 17 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 17 overflies 3233 existing households, which equates to an approximate population of 7700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 3783 households and an approximate population of 9000.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 17 overflies a total of 29 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 17 currently overflies a population of approximately 7700 people and 24 noise sensitive buildings.</p> <p>The estimated track length is 46km (25Nm).</p> <p>Option 17 overflies a total of 29 noise sensitive receptors and 550 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 17 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.14 RW 22 – 2,000ft Transition Option 18

Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 18		REJECT	
<p><i>Option Description:</i></p> <p>Option 18 has an IAF at 7,000ft to the north-west of the airport at a position close to the northern boundary of the design envelope close to Bassingbourn Barracks.</p> <p>From this position this option enables a CDA at 4% (2.3°), which is close to the optimal gradient for low noise approaches and within the range for CDAs defined within CAA and ICAO guidance.</p> <p>This option is close to equidistant to both runway directions but has slightly fewer track miles for runway 22 operations. This results in slightly longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>From the IAF the route turns east between Royston and Melbourn and routes to the north of Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 18 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

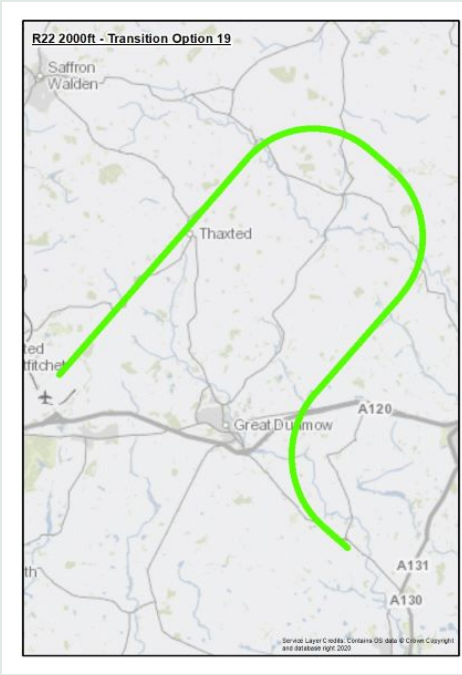
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 18 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 18. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 18 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			

DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 18 overflies 4968 existing households, which equates to an approximate population of 12000. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 5618 households and an approximate population of 13500.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 18 overflies a total of 42 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will	NOT MET	PARTIAL	MET



<p>take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 18 currently overflies a population of approximately 12000 people and 37 noise sensitive buildings.</p> <p>The estimated track length is 52km (28Nm).</p> <p>Option 18 overflies a total of 42 noise sensitive receptors and 650 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 18 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.15 RW 22 – 2,000ft Transition Option 19

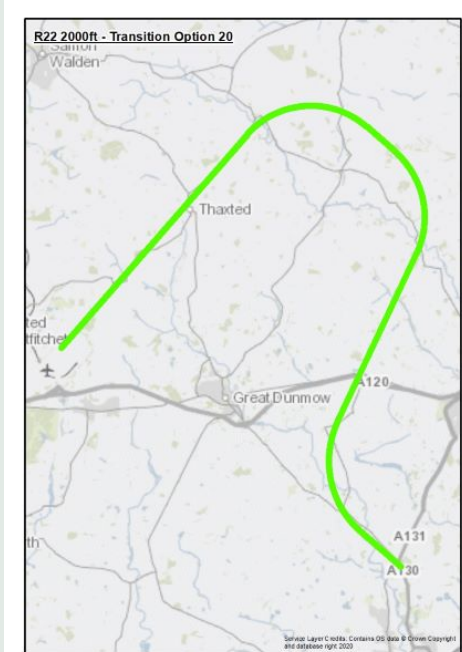
Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 19		REJECT	
<p><i>Option Description:</i></p> <p>Option 19 has an IAF at 7,000ft to the south-east of the airport which is almost equidistant to each runway threshold but with a slightly shorter track for runway 22. It has been designed as an option that offers potential for noise relief if combined with Option 20.</p> <p>From this position this option enables a CDA at 5.2% (3°), which is at the upper limits for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north-east onto a downwind track and routes further to the East of Great Dunmow and west of Braintree. It then turns left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 19. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 overflies 4004 existing households, which equates to an approximate population of 10100. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 13154 households and an approximate population of 33200.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 19 overflies a total of 26 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 19 currently overflies a population of approximately 10100 people and 23 noise sensitive buildings.</p> <p>The estimated track length is 43km (23Nm).</p> <p>Option 19 overflies a total of 26 noise sensitive receptors and 9150 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 19 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.16 RW 22 – 2,000ft Transition Option 20

Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 20		REJECT	
<p><i>Option Description:</i></p> <p>Option 20 has an IAF at 7,000ft to the south-east of the airport close to Option 19, which is almost equidistant to each runway threshold but with a slightly shorter track for runway 22. It has been designed to offer potential for noise relief if combined with Option 19.</p> <p>From this position this option enables a CDA at 5% (2.9°), which is at the upper limits for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north-east onto a downwind track and routes further to the east of Great Dunmow and west of Braintree. It then turns left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

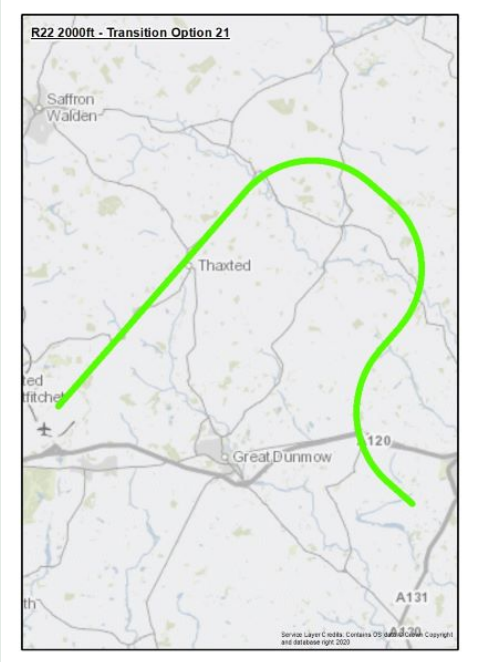
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 20. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 overflies 4010 existing households, which equates to an approximate population of 9600. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 14210 households and an approximate population of 33900.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 20 overflies a total of 35 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			



<p>Option 20 currently overflies a population of approximately 9600 people and 32 noise sensitive buildings.</p> <p>The estimated track length is 45km (24Nm).</p> <p>Option 20 overflies a total of 35 noise sensitive receptors and 10200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 20 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.17 RW 22 – 2,000ft Transition Option 21

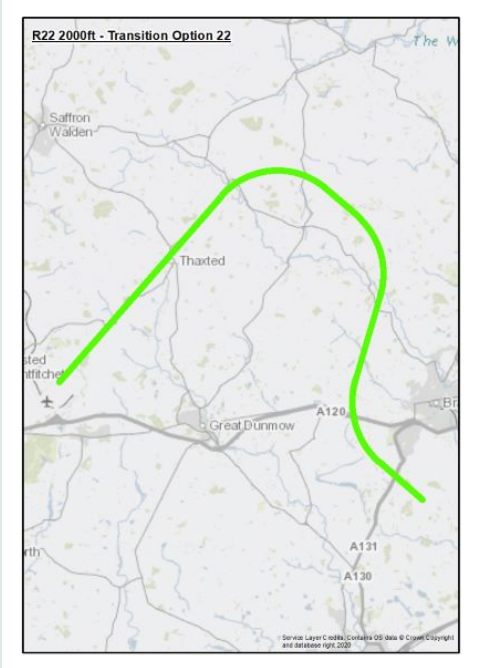
Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 21		REJECT	
<p><i>Option Description:</i></p> <p>Option 21 has an IAF at 7,000ft to the east of the airport to the south east of Braintree and has been designed as the shortest PANS-OPS compliant route to runway 22 for this joining point and may offer potential for noise relief when combined with Option 22.</p> <p>As a result, this option has fewer track miles for runway 22 operations, but this results in longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>This option enables a CDA at 6.3% (3.6°), which is above the upper limits for low noise approaches and the recommended range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north-east with a short stabilisation segment and then turns left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation</p>	NOT MET	PARTIAL	MET

Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 21. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			

DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 overflies 2935 existing households, which equates to an approximate population of 7000. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 15535 households and an approximate population of 36800.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 21 overflies a total of 22 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will	NOT MET	PARTIAL	MET

take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 currently overflies a population of approximately 7000 people and 18 noise sensitive buildings.</p> <p>The estimated track length is 38km (21Nm).</p> <p>Option 21 overflies a total of 22 noise sensitive receptors and 12600 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 21 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.18 RW 22 – 2,000ft Transition Option 22

Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 22		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 22 has an IAF at 7,000ft to the east of the airport and to the south of Braintree. It has been designed to offer potential for noise relief if combined with Option 21.</p> <p>As a result, this option has fewer track miles for runway 22 operations, but this results in longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>This option enables a CDA at 5.8 (3.3°), which is above the upper limits for low noise approaches and the recommended range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east with a short stabilisation segment and then turns left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 22 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

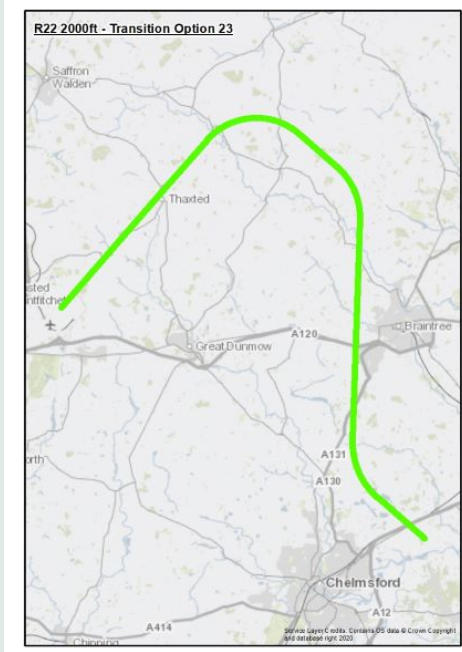
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 22 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 22. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 22 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 22 overflies 3999 existing households, which equates to an approximate population of 9800. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 10899 households and an approximate population of 26800.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 22 overflies a total of 19 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET



emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 22 currently overflies a population of approximately 9800 people and 15 noise sensitive buildings.</p> <p>The estimated track length is 40km (22Nm).</p> <p>Option 22 overflies a total of 19 noise sensitive receptors and 6900 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 22 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.19 RW 22 – 2,000ft Transition Option 23

Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 23		REJECT	
<p><i>Option Description:</i></p> <p>Option 23 has an IAF at 7,000ft to the south east of the airport at a position close to the southern boundary of the design envelope mid-way between Chelmsford and Witham.</p> <p>From this position this option enables a CDA at 4.4% (2.5°), which is the optimal gradient for low noise approaches and the range defined for CDAs defined within CAA and ICAO guidance.</p> <p>After 7,000ft the route turns north and routes to the west of Braintree before turning left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 23 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 23 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 23. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 23 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 23 overflies 8297 existing households, which equates to an approximate population of 20800. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 15397 households and an approximate population of 38600.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 23 overflies a total of 26 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 23 currently overflies a population of approximately 20800 people and 21 noise sensitive buildings.</p> <p>The estimated track length is 48km (26Nm).</p> <p>Option 23 overflies a total of 26 noise sensitive receptors and 7100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 23 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 23.20 RW 22 – 2,000ft Transitions: Viable but Poor Fit Options

### 23.20.1 RWY 22 - 2,000ft Transition Option A3

IAF-3 is south and east of the aerodrome, equidistant to both runway thresholds but at a greater distance than other equidistant options. It facilitates a CDA but with a sub-optimum profile.

Reason for exclusion: Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between STN arrivals and interactions with traffic to and from other airports on routes M197 and Q295 and the network joining points for LTN, LCY and LHR departing traffic. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is efficiency and the expeditious flow of traffic including greater runway throughput. By creating interactions with routes traffic for other airports this option would not comply with this initiative (and therefore the Policy DP) as it has the potential to require ATC interaction which would reduce this efficiency.

### 23.20.2 RWY 22 - 2,000ft Transition Option B6

IAF-6 east of the aerodrome and west of Colchester. The IAF lies outside of the 2,000ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy and Safety.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the CAA Airspace Containment Policy. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

### 23.20.3 RWY 22 - 2,000ft Transition Option C7

IAF-7 is north east of the aerodrome mid-way between Cambridge and Newmarket to the north east of STN. It was designed as a mirror for Option B6. The IAF lies outside of the 2,000ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 23.20.4 RWY 22 - 2,000ft Transition Option D11

IAF-11 is north east of the aerodrome close to the current ABBOT hold. The IAF is outside of the 2,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 23.20.5 RWY 22 - 2,000ft Transition Option E15

IAF-15 is positioned to the north to the east of Duxford and to the north west of STN. The IAF is outside of the 2,000ft design area so a CDA is achievable for runway 22, but not for 04.

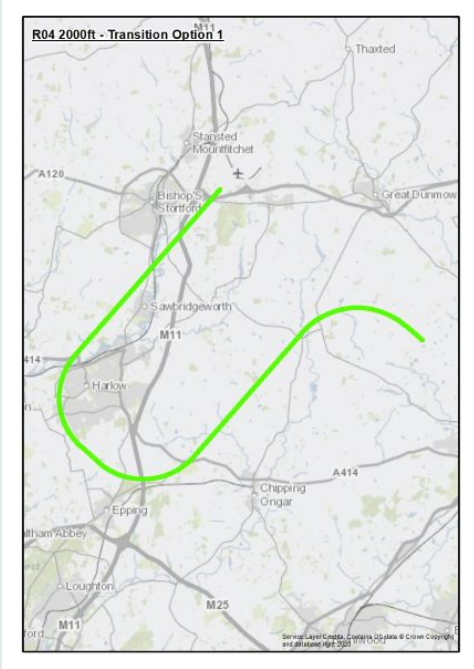
Reason for exclusion: Safety and Policy.

Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the Minimum Stabilisation Distance (MSD) requirements within PANS-OPS. As a result this option would not comply with the Safety DP.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

# 24 RW 04 – 2,000ft Transitions

## 24.1 RW 04 – 2,000ft Transition Option 1

Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 1		REJECT	
<p><i>Option Description:</i></p> <p>Option 1 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables an optimal low noise CDA at 4.6% (2.6°) for both runways.</p> <p>From the IAF the route turns south west onto a downwind track parallel with the final approach and overhead North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

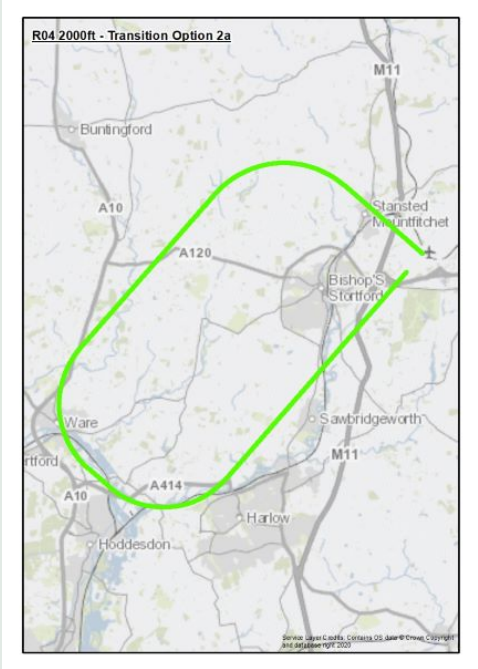


<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			

The track to 7,000ft is shorter than the 'do minimum' option.			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 9531 existing households, which equates to an approximate population of 23500. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 12481 households and an approximate population of 30800.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 45 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike	NOT MET	PARTIAL	MET

<p>the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 23500 people and 36 noise sensitive buildings.</p> <p>The estimated track length is 47km (25Nm).</p> <p>Option 1 overflies a total of 45 noise sensitive receptors and 2950 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.2 RW 04 – 2,000ft Transition Option 2a

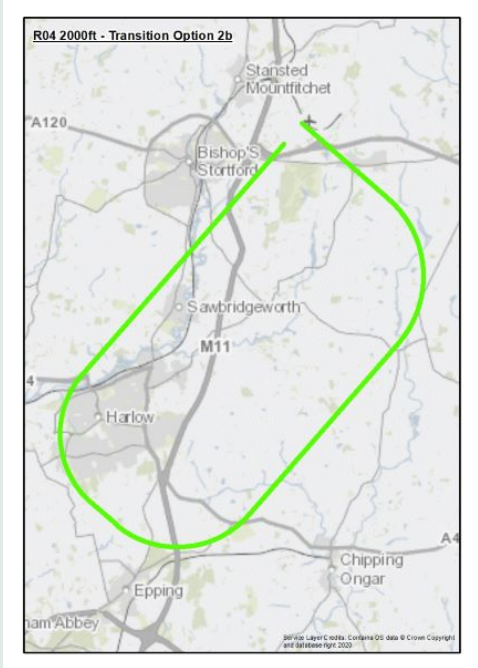
Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 2a		REJECT	
<p><i>Option Description:</i></p> <p>This transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the SE and turn downwind left.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables an optimal low noise CDA at 4.1% (2.4°) for both runways.</p> <p>From the IAF the route is heading north west and then turns south west onto a downwind track parallel with the final approach and routes close to Ware at which point it turns left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2a. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available</p>	NOT MET	PARTIAL	MET

aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a overflies 16180 existing households, which equates to an approximate population of 37600. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 18430 households and an approximate population of 42900.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2a overflies a total of 71 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a currently overflies a population of approximately 37600 people and 56 noise sensitive buildings.</p> <p>The estimated track length is 51km (28Nm).</p> <p>Option 2a overflies a total of 71 noise sensitive receptors and 2250 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2a is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

### 24.3 RW 04 – 2,000ft Transition Option 2b

Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 2b		REJECT	
<p><i>Option Description:</i></p> <p>This transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the NW and turn downwind right, and then turn left base onto the final approach.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables an optimal low noise CDA at 4.1% (2.4°) for both runways.</p> <p>From the IAF the route is heading south east and then turns south west onto a downwind track parallel with the final approach and overhead North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

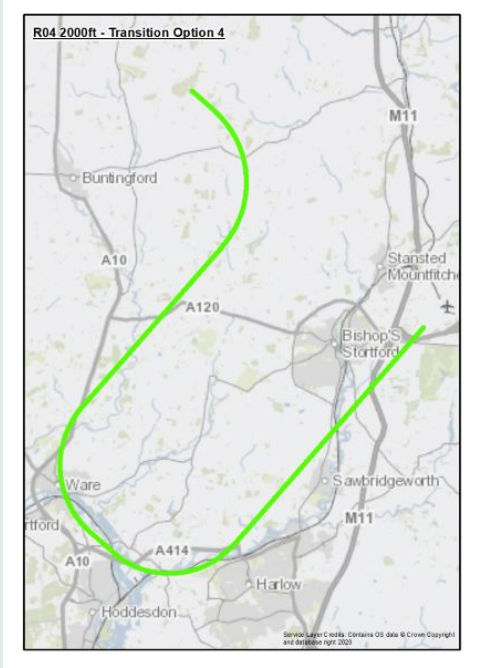


<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2b. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b overflies 11699 existing households, which equates to an approximate population of 29000. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 15949 households and an approximate population of 39600.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2b overflies a total of 52 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b currently overflies a population of approximately 29000 people and 41 noise sensitive buildings.</p> <p>The estimated track length is 51km (28Nm).</p> <p>Option 2b overflies a total of 52 noise sensitive receptors and 4250 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2b is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.4 RW 04 – 2,000ft Transition Option 4

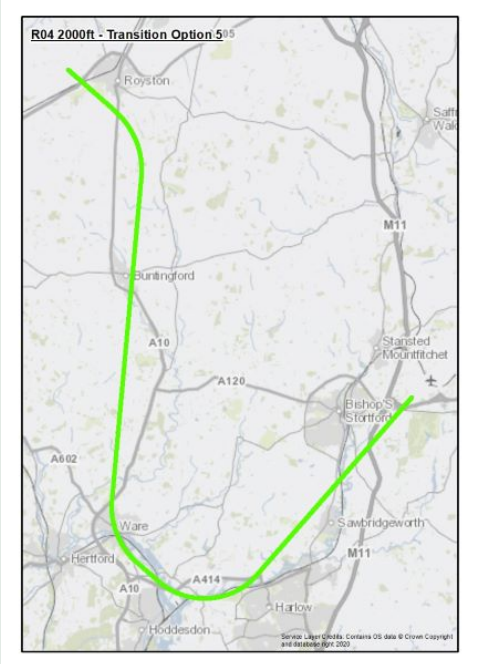
Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 4		REJECT	
<p><i>Option Description:</i></p> <p>Option 4 has an IAF at 7,000ft to the north west of the airport which is equidistant to each runway threshold.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables an optimal low noise CDA at 4.6% (2.6°) for both runways.</p> <p>From the IAF the route turns south west onto a downwind track parallel with the final approach and routes close to Ware at which point it turns left onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 13268 existing households, which equates to an approximate population of 30700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 14568 households and an approximate population of 33700.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 62 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 30700 people and 46 noise sensitive buildings.</p> <p>The estimated track length is 47km (25Nm).</p> <p>Option 4 overflies a total of 62 noise sensitive receptors and 1300 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.5 RW 04 – 2,000ft Transition Option 5

Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 5		REJECT	
<p><i>Option Description:</i></p> <p>Option 5 has an IAF at 7,000ft to the north west of the airport which is close to the northern element of the current LOREL hold. It has been designed as an option that has minimum change from current operations and may also offer potential for noise relief if combined with Option 12.</p> <p>From this position this option enables a CDA at 3.9% (2.2°) which is slightly lower than the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south from a position just West of Royston and routes just south of Buntingford and then turns left onto base leg close to Ware and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

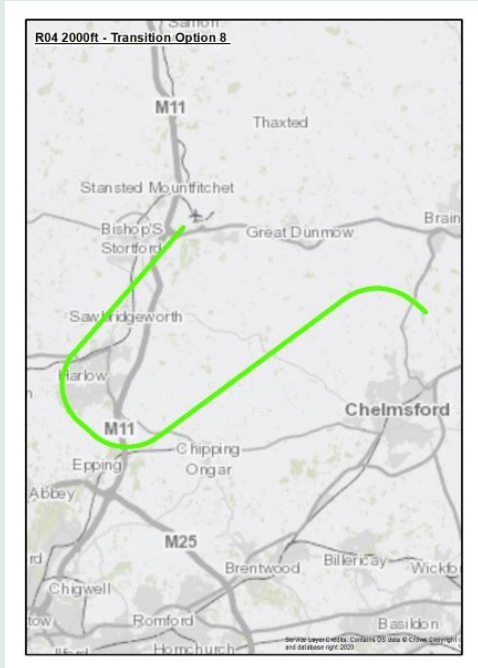


taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 overflies 18012 existing households, which equates to an approximate population of 41300. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 20112 households and an approximate population of 46200.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 5 overflies a total of 73 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 currently overflies a population of approximately 41300 people and 62 noise sensitive buildings.</p> <p>The estimated track length is 53km (29Nm).</p> <p>Option 5 overflies a total of 73 noise sensitive receptors and 2100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.6 RW 04 – 2,000ft Transition Option 8

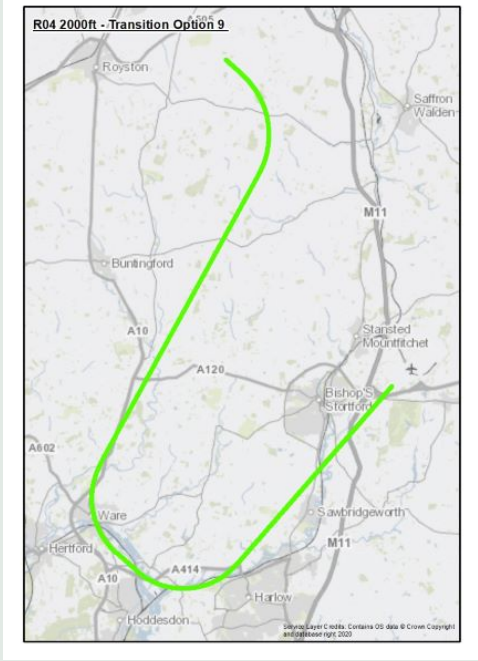
Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 8		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 8 has an IAF at 7,000ft to the south-east of the airport in the vicinity of Great Leighs. This option has a slight bias for runway 22 and this results in slightly longer track miles and a shallower CDA for this runway.</p> <p>From this position this option enables a CDA at 3.8% (2.2°) which is just below the optimal for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west onto a downwind track parallel with the final approach and overhead North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 8. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 8 overflies 9535 existing households, which equates to an approximate population of 23700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 12285 households and an approximate population of 30500.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 8 overflies a total of 48 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 8 currently overflies a population of approximately 23700 people and 38 noise sensitive buildings.</p> <p>The estimated track length is 54km (29Nm).</p> <p>Option 8 overflies a total of 48 noise sensitive receptors and 2750 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 8 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.7 RW 04 – 2,000ft Transition Option 9

Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 9		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 9 has an IAF at 7,000ft to the North West of the airport in the vicinity of Heydon. This option has a slight bias for runway 22 and this results in slightly longer track miles and a shallower CDA for this runway.</p> <p>From this position this option enables a CDA at 3.8% (2.2°) which is just below the optimal for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west and routes close to Puckeridge and then turns left onto base leg close to Ware and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

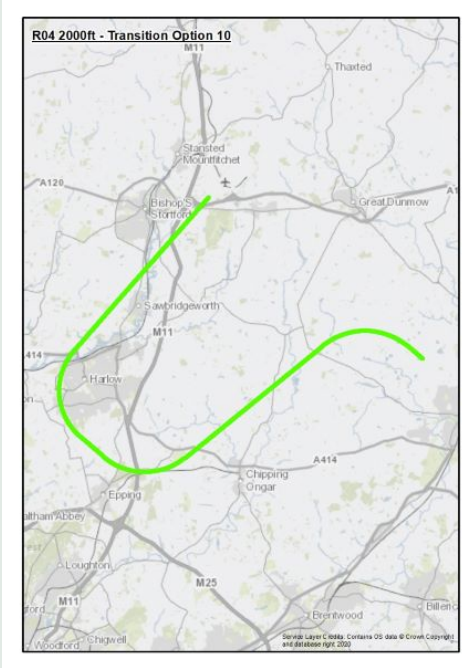


<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 9. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 9 overflies 13523 existing households, which equates to an approximate population of 30900. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 14723 households and an approximate population of 33700.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 9 overflies a total of 67 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 9 currently overflies a population of approximately 30900 people and 56 noise sensitive buildings.</p> <p>The estimated track length is 54km (29Nm).</p> <p>Option 9 overflies a total of 67 noise sensitive receptors and 1200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 9 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.8 RW 04 – 2,000ft Transition Option 10

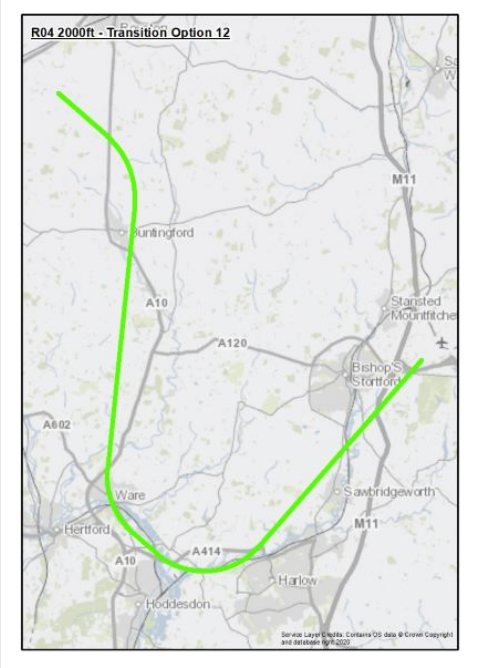
Design Principle Evaluation				
Option Name: RW 04 – 2,000ft Transition Option 10		REJECT		
<p><i>Option Description:</i></p> <p>Option 10 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold but slightly further SE than Option 1. It has been designed as an option that offers potential for noise relief if combined with Option 1.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables an optimal low noise CDA at 4.5% (2.6°) for both runways.</p> <p>From the IAF the route turns south west onto a downwind track and routes further to the south than Option 1 to create noise dispersal. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>				
DP <b>S</b> : Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.	NOT MET	PARTIAL	MET	
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>				
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET	

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 10. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

This route option is a PBN arrival route, is flyable and supports a continuous descent approach.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 overflies 9271 existing households, which equates to an approximate population of 22800. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 11371 households and an approximate population of 27900.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 10 overflies a total of 45 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 currently overflies a population of approximately 22800 people and 36 noise sensitive buildings.</p>			

<p>The estimated track length is 48km (26Nm).</p> <p>Option 10 overflies a total of 45 noise sensitive receptors and 2100 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 10 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.9 RW 04 – 2,000ft Transition Option 12

Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 12		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 12 has an IAF at 7,000ft to the north west of the airport which is close to the southern element of the current LOREL hold. It has been designed as an option that has minimum change from current operations and may also offer potential for noise relief if combined with Option 5.</p> <p>From this position this option enables a CDA at 4.4% (2.5°) which is the optimum for low noise approaches and within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south from a position just West of Royston and routes just south of Buntingford and then turns left onto base leg close to Ware and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

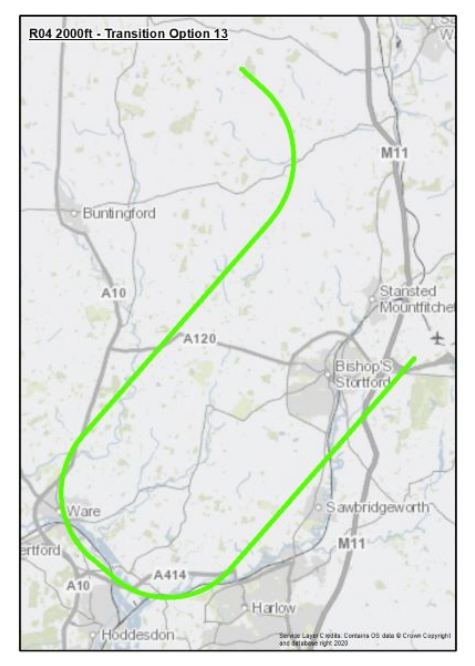


taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 12. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12 overflies 15098 existing households, which equates to an approximate population of 35000. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 16848 households and an approximate population of 39100.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 12 overflies a total of 62 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 12 currently overflies a population of approximately 35000 people and 52 noise sensitive buildings.</p> <p>The estimated track length is 49km (26Nm).</p> <p>Option 12 overflies a total of 62 noise sensitive receptors and 1750 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 12 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.10 RW 04 – 2,000ft Transition Option 13

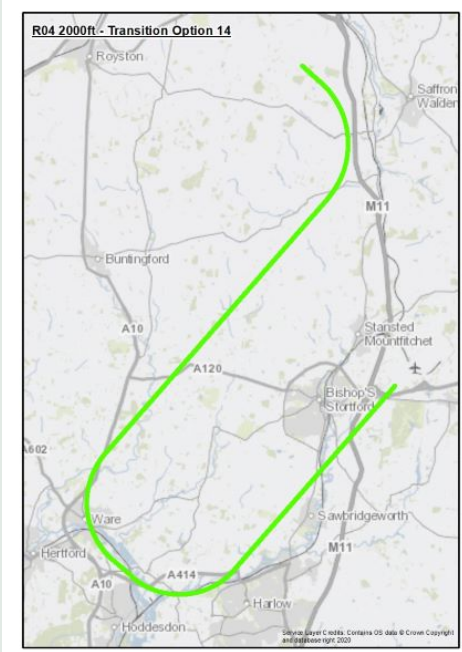
Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 13		REJECT	
<p><i>Option Description:</i></p> <p>Option 13 has an IAF at 7,000ft to the North West of the airport in the vicinity of Langley Upper Green. This option has a slight bias for runway 22 and this results in slightly longer track miles for this runway.</p> <p>From this position this option enables a CDA at 4.1% (2.3°) which is close to the optimal for low noise approaches and within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west on a track parallel with the final approach and then turns left onto base leg close to Ware and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 13. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 overflies 13128 existing households, which equates to an approximate population of 30300. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 14328 households and an approximate population of 33000.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 13 overflies a total of 63 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 currently overflies a population of approximately 30300 people and 48 noise sensitive buildings.</p> <p>The estimated track length is 51km (28Nm).</p> <p>Option 13 overflies a total of 63 noise sensitive receptors and 1200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 13 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.11 RW 04 – 2,000ft Transition Option 14

Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 14		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 14 has an IAF at 7,000ft to the North West of the airport in the vicinity of Strethall to create the shortest viable route for runway 22 which results in longer track miles for this runway.</p> <p>For 04 this option enables a CDA at 3.6% (2.1°) which is slightly below the optimal for low noise approaches but within the recommended range for CDAs within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west on a track parallel with the final approach and then turns left onto base leg close to Ware and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

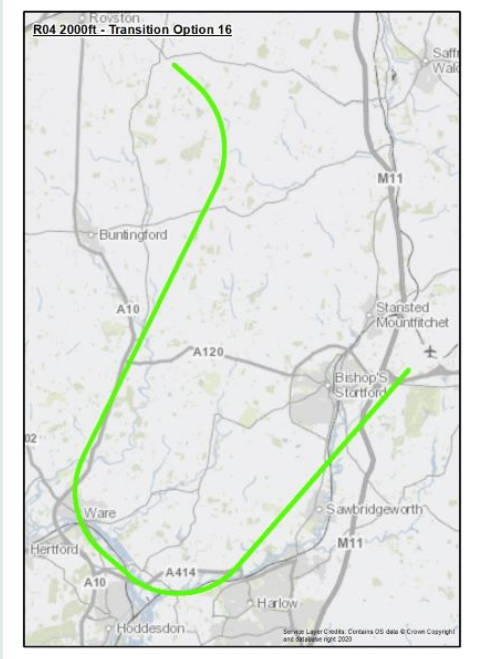


taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 14. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 overflies 12803 existing households, which equates to an approximate population of 29400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 13953 households and an approximate population of 32000.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 14 overflies a total of 58 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 currently overflies a population of approximately 29400 people and 46 noise sensitive buildings.</p> <p>The estimated track length is 56km (30Nm).</p> <p>Option 14 overflies a total of 58 noise sensitive receptors and 1150 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 14 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.12 RW 04 – 2,000ft Transition Option 16

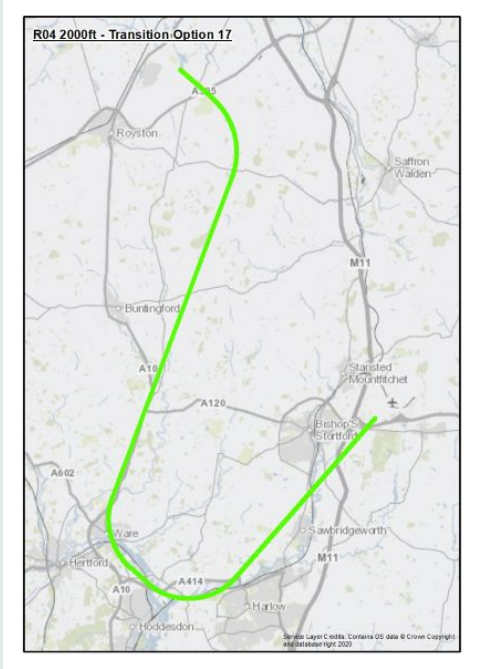
Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 16		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 16 has an IAF at 7,000ft to the North West of the airport in the vicinity of Great Chishill. This gives a slight bias for runway 22 which results in slightly longer track miles for this runway.</p> <p>From this position this option enables a CDA at 4.1% (2.3°) which is close to the optimal gradient for low noise approaches and within the range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west and routes close to Puckeridge and then turns left onto base leg close to Ware and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 16. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 overflies 13754 existing households, which equates to an approximate population of 31400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 14954 households and an approximate population of 34200.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 16 overflies a total of 66 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 16 currently overflies a population of approximately 31 400 people and 55 noise sensitive buildings.</p> <p>The estimated track length is 51 km (28Nm).</p> <p>Option 16 overflies a total of 66 noise sensitive receptors and 1200 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 16 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.13 RW 04 – 2,000ft Transition Option 17

Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 17	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 17 has an IAF at 7,000ft to the North West of the airport, approx. 1 mile north east of Melbourn. This gives a slight bias for runway 22 which results in slightly longer track miles for this runway.</p> <p>From this position this option enables a CDA at 3.5% (2°) which is below the optimal gradient for low noise approaches but within the range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west and routes close to Puckeridge and then turns left onto base leg close to Ware and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 17 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

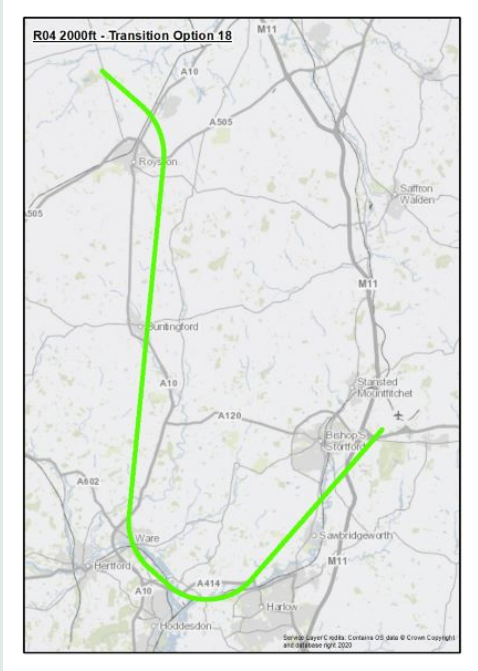


<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 17 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 17. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 17 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 17 overflies 13882 existing households, which equates to an approximate population of 31600. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 15232 households and an approximate population of 34700.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 17 overflies a total of 64 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 17 currently overflies a population of approximately 31 600 people and 54 noise sensitive buildings.</p> <p>The estimated track length is 58km (31Nm).</p> <p>Option 17 overflies a total of 64 noise sensitive receptors and 1350 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 17 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.14 RW 04 – 2,000ft Transition Option 18

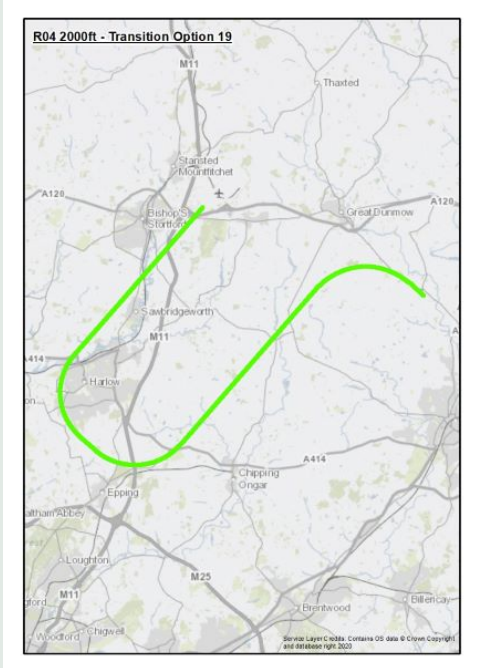
Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 18		REJECT	
<p><i>Option Description:</i></p> <p>Option 18 has an IAF at 7,000ft to the north west of the airport at a position close to the northern boundary of the design envelope close to Bassingbourn Barracks. This gives a slight bias for runway 22 which results in slightly longer track miles for this runway</p> <p>From this position this option enables a CDA at 3.7% (2.1°) which is below the optimal gradient for low noise approaches but within the range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south from a position just West of Royston and routes just south of Buntingford and then turns left onto base leg close to Ware and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 18 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 18 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 18. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option is likely to overfly new areas.</p> <p>Option 18 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 18 overflies 16739 existing households, which equates to an approximate population of 39000. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 19189 households and an approximate population of 44700.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 18 overflies a total of 76 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 18 currently overflies a population of approximately 39000 people and 66 noise sensitive buildings.</p> <p>The estimated track length is 59km (32Nm).</p> <p>Option 18 overflies a total of 76 noise sensitive receptors and 2450 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 18 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.15 RW 04 – 2,000ft Transition Option 19

Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 19		REJECT	
<p><i>Option Description:</i></p> <p>Option 19 has an IAF at 7,000ft to the south-east of the airport which is almost equidistant to each runway threshold but with a slightly shorter track for runway 22. It has been designed as an option that offers potential for noise relief if combined with Option 20.</p> <p>From this position this option enables a CDA at 4.1% (2.3°) which is close to the optimal for low noise approaches and within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west onto a downwind track parallel with the final approach and overhead North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

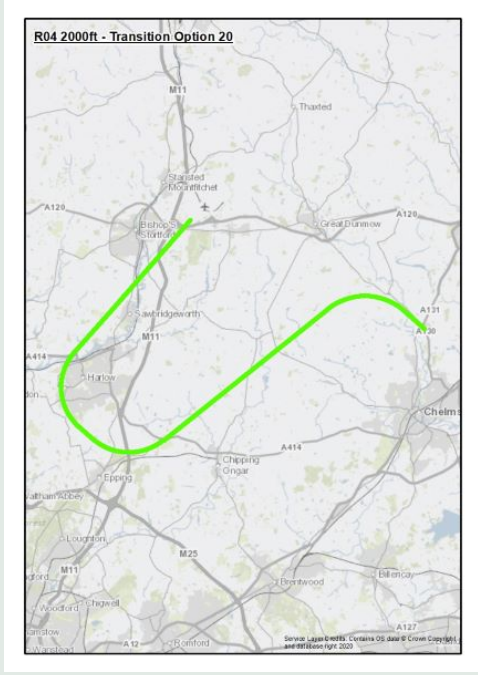


<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 19. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 overflies 9455 existing households, which equates to an approximate population of 23300. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 12155 households and an approximate population of 30000.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 19 overflies a total of 44 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 19 currently overflies a population of approximately 23300 people and 34 noise sensitive buildings.</p> <p>The estimated track length is 52km (28Nm).</p> <p>Option 19 overflies a total of 44 noise sensitive receptors and 2700 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 19 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.16 RW 04 – 2,000ft Transition Option 20

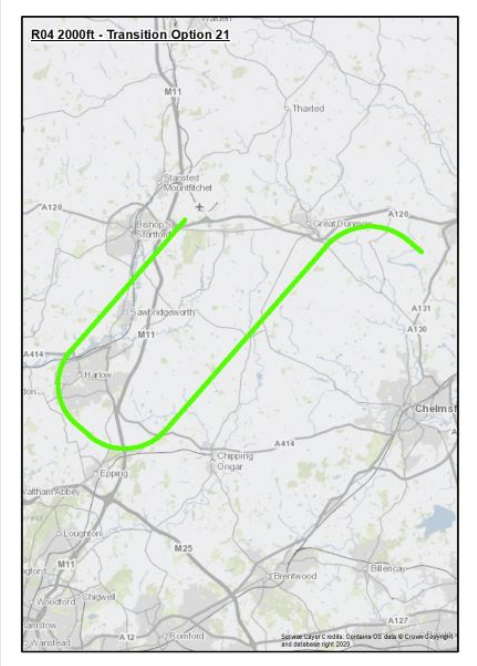
Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 20		REJECT	
<p><i>Option Description:</i></p> <p>Option 20 has an IAF at 7,000ft to the south-east of the airport close to Option 19 which is almost equidistant to each runway. It has been designed to offer potential for noise relief if combined with Option 19.</p> <p>From this position this option enables a CDA at 4% (2.3°) which is close to the optimal for low noise approaches and within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west onto a downwind track to the south of High Easter and overhead North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 20. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 overflies 9797 existing households, which equates to an approximate population of 24100. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 15347 households and an approximate population of 37700.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 20 overflies a total of 46 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 20 currently overflies a population of approximately 24100 people and 37 noise sensitive buildings.</p> <p>The estimated track length is 53km (29Nm).</p> <p>Option 20 overflies a total of 46 noise sensitive receptors and 5550 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 20 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.17 RW 04 – 2,000ft Transition Option 21

Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 21		REJECT	
<p><i>Option Description:</i></p> <p>Option 21 has an IAF at 7,000ft to the East of the airport to the south east of Braintree and has been designed as the shortest PANS-OPS compliant route to runway 22. This results in longer track miles for this runway. It may offer potential for noise relief when combined with Option 22.</p> <p>This option enables a CDA at 3.6% (2.1°) which is slightly below the optimal for low noise approaches but within the recommended range for CDAs within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west to the south of Great Dunmow onto a downwind track parallel with the final approach and overhead North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

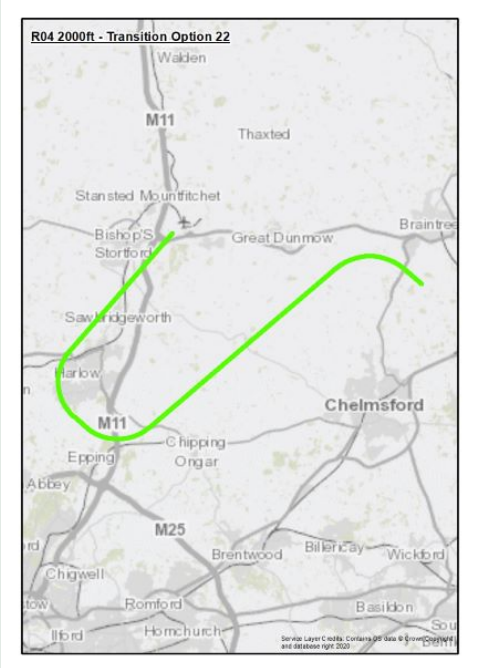


taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 21. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			

DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 overflies 11282 existing households, which equates to an approximate population of 28400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 16482 households and an approximate population of 41400.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 21 overflies a total of 53 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will	NOT MET	PARTIAL	MET

<p>take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 currently overflies a population of approximately 28400 people and 42 noise sensitive buildings.</p> <p>The estimated track length is 56km (30Nm).</p> <p>Option 21 overflies a total of 53 noise sensitive receptors and 5200 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 21 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.18 RW 04 – 2,000ft Transition Option 22

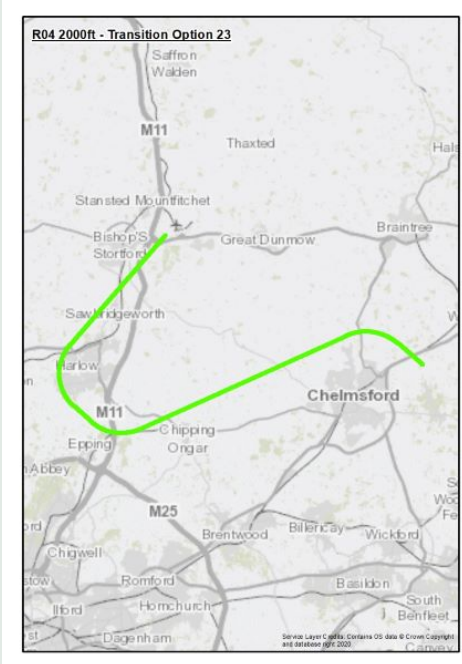
Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 22		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 22 has an IAF at 7,000ft to the East of the airport and to the South of Braintree. It has been designed to offer potential for noise relief if combined with Option 21</p> <p>This option enables a CDA at 3.5% (2°) which is below the optimum for low noise approaches but within the recommended range for CDAs within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west to the south of Great Dunmow onto a track that intercepts option 21 in the vicinity of North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 22 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 22 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 22. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 22 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 22 overflies 11016 existing households, which equates to an approximate population of 27400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 17116 households and an approximate population of 42700.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 22 overflies a total of 54 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 22 currently overflies a population of approximately 27400 people and 45 noise sensitive buildings.</p> <p>The estimated track length is 58km (31Nm).</p> <p>Option 22 overflies a total of 54 noise sensitive receptors and 6100 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 22 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.19 RW 04 – 2,000ft Transition Option 23

Design Principle Evaluation			
Option Name: RW 04 – 2,000ft Transition Option 23		REJECT	
<p><i>Option Description:</i></p> <p>Option 23 has an IAF at 7,000ft to the south east of the airport at a position close to the southern boundary of the design envelope mid-way between Chelmsford and Witham.</p> <p>From this position this option enables a CDA at 3.5% (2°) which is below the optimal gradient for low noise approaches but within the range defined for CDAs defined within CAA and ICAO guidance.</p> <p>After 7,000ft the route turns west and routes to the north of Chelmsford before turning right onto base leg to establish aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 23 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 23 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 23. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 23 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 23 overflies 10906 existing households, which equates to an approximate population of 26400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 19206 households and an approximate population of 46500.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 23 overflies a total of 60 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 23 currently overflies a population of approximately 26400 people and 51 noise sensitive buildings.</p> <p>The estimated track length is 57km (31Nm).</p> <p>Option 23 overflies a total of 60 noise sensitive receptors and 8300 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 23 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 24.20 RW 04 – 2,000ft Transitions: Viable but Poor Fit Options

### 24.20.1 RWY 04 - 2,000ft Transition Option A3

IAF-3 is south and east of the aerodrome, equidistant to both runway thresholds but at a greater distance than other equidistant options. It facilitates a CDA but with a sub-optimum profile.

Reason for exclusion: Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between STN arrivals and interactions with traffic to and from other airports on routes M197 and Q295 and the network joining points for LTN, LCY and LHR departing traffic. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is efficiency and the and the expeditious flow of traffic including greater runway throughput. By creating interactions with routes traffic for other airports this option would not comply with this initiative (and therefore the Policy DP) as it has the potential to require ATC interaction which would reduce this efficiency.

### 24.20.2 RWY 04 - 2,000ft Transition Option B6

IAF-6 east of the aerodrome and west of Colchester. The IAF lies outside of the 2,000ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy and Safety.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the CAA Airspace Containment Policy. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

### 24.20.3 RWY 04 - 2,000ft Transition Option C7

IAF-7 is north east of the aerodrome mid-way between Cambridge and Newmarket to the north east of STN. It was designed as a mirror for Option B6. The IAF lies outside of the 2,000ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 24.20.4 RWY 04 - 2,000ft Transition Option D11

IAF-11 is north east of the aerodrome close to the current ABBOT hold. IAF is outside of the 2,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 24.20.5 RWY 04 - 2,000ft Transition Option E15

IAF-15 is positioned to the north to the east of Duxford and to the north west of STN. The IAF is outside of the 2,000ft design area so a CDA is achievable for runway 22, but not for 04.

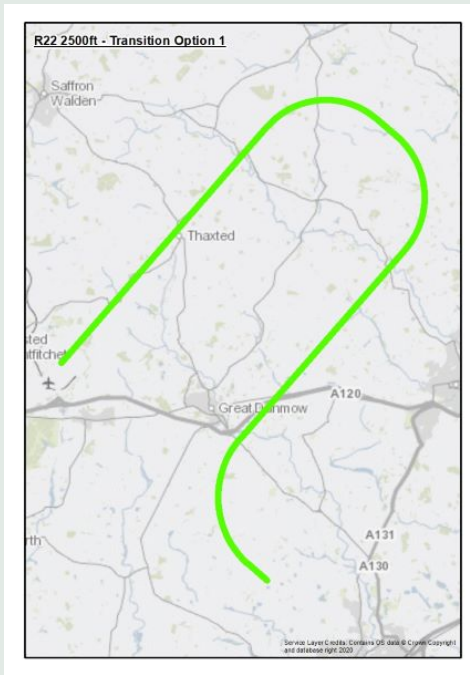
Reason for exclusion: Safety and Policy.

Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the Minimum Stabilisation Distance (MSD) requirements within PANS-OPS. As a result this option would not comply with the Safety DP.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

# 25 RW 22 – 2,500ft Transitions

## 25.1 RW 22 – 2,500ft Transition Option 1

Design Principle Evaluation			
Option Name: Transition Option 1 RW 22 - 2,500ft FAF		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 1 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold.</p> <p>From this position there is an equal distance between each runway threshold which enables a CDA at 3.8% (2.2°) which is slightly lower than the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes west of Braintree. It then turns left onto base leg and establishes aircraft on a 2,500ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA's Containment Policy for the primary containment areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p>			

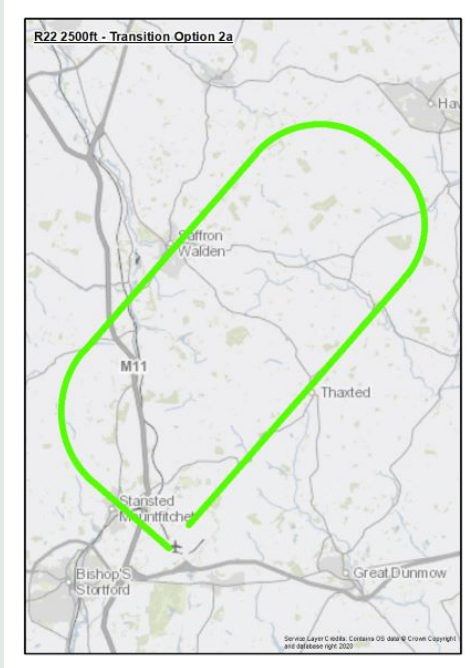
At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p>			

<p>This option overflies fewer noise sensitive receptors than the 'do minimum' option. Assessed in isolation, it supports CDO/CDA operations. The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> Option 1 overflies 3813 existing households, which equates to an approximate population of 9700. This is more than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 13113 households and an approximate population of 33500.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 1 overflies a total of 22 noise sensitive receptors.</p>			



This is fewer than the 'do minimum' option.			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 9700 people and 18 noise sensitive buildings.</p> <p>The estimated track length is 53km (29Nm).</p> <p>Option 1 overflies a total of 22 noise sensitive receptors and 9300 proposed dwelling(s).</p>			
DP <b>E</b> : We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
DP <b>A</b> : Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.2 RW 22 – 2,500ft Transition Option 2a

Design Principle Evaluation			
Option Name: Transition Option 2a RW 22 – 2,500ft FAF		REJECT	
<p><i>Option Description:</i></p> <p>This central transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the SE and turn downwind right, and then turn right base onto the final approach.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables a CDA at 3.4% (2°) for both runways. which is slightly lower than the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes over Saffron Walden. It then turns right onto base leg and establishes aircraft on a 2,500ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p>			

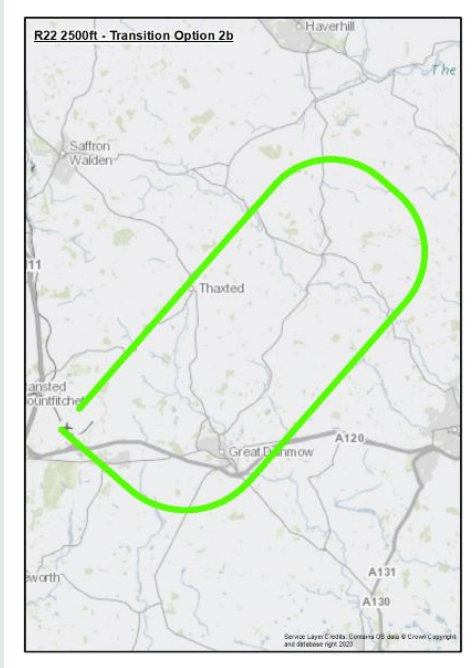
<p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2a. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 2a will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a overflies 14563 existing households, which equates to an approximate population of 34600. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 16763 households and an approximate population of 39800.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and</p>	NOT MET	PARTIAL	MET

landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2a overflies a total of 63 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a currently overflies a population of approximately 34600 people and 58 noise sensitive buildings.</p> <p>The estimated track length is 57km (31Nm).</p> <p>Option 2a overflies a total of 63 noise sensitive receptors and 2200 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2a is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise</p>	NOT MET	PARTIAL	MET

the environmental impacts from those aircraft.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

### 25.3 RW 22 – 2,500ft Transition Option 2b

Design Principle Evaluation			
Option Name: Transition Option 2b RW 22 – 2,500ft FAF		ACCEPT	
<p><i>Option Description:</i></p> <p>This central transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the NW and turn downwind left, and then turn left base onto the final approach.</p> <p>This option enables a CDA at 3.4% (2°) for both runways. which is slightly lower than the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes to the East of Great Dunmow and the West of Braintree. It then turns left onto base leg close to Wethersfield and establishes aircraft on a 2,500ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

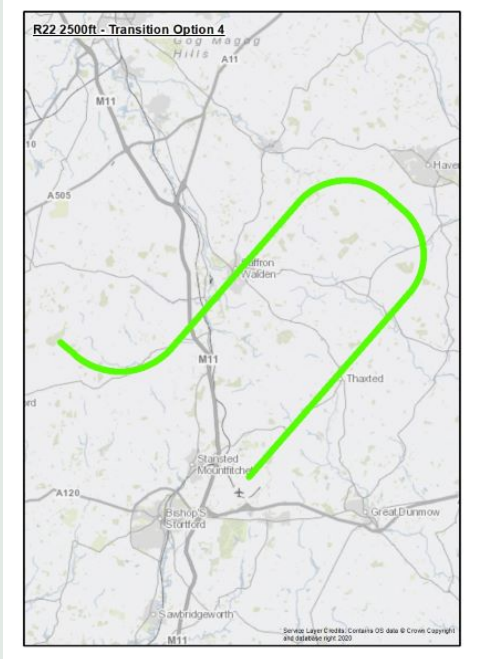
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2b. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			



DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b overflies 6274 existing households, which equates to an approximate population of 16000. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 16574 households and an approximate population of 42300.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2b overflies a total of 30 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will	NOT MET	PARTIAL	MET

<p>take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b currently overflies a population of approximately 16000 people and 24 noise sensitive buildings.</p> <p>The estimated track length is 57km (31Nm).</p> <p>Option 2b overflies a total of 30 noise sensitive receptors and 10300 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2b is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.4 RW 22 – 2,500ft Transition Option 4

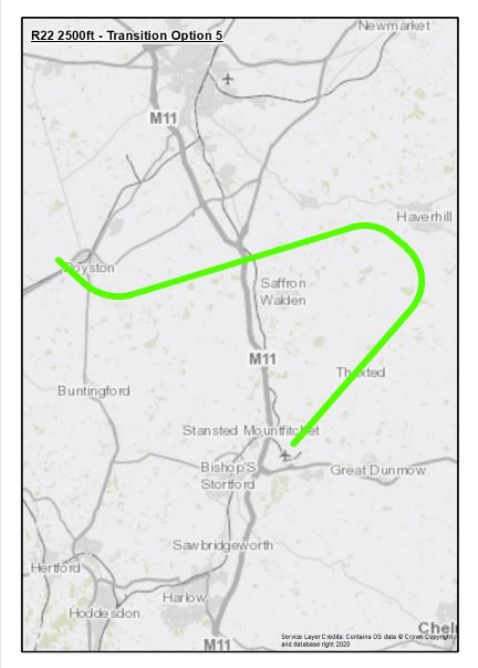
Design Principle Evaluation			
Option Name: Transition Option 4 RW 22 – 2,500ft FAF		REJECT	
<p><i>Option Description:</i></p> <p>Option 4 has an IAF at 7,000ft to the north west of the airport which is equidistant to each runway threshold.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables a CDA at 3.8% (2.2°) which is slightly lower than the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes close to Saffron Walden. It then turns right onto base leg and establishes aircraft on a 2,500ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA's Containment Policy for the primary containment areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p>			

The track to 7,000ft is longer than the 'do minimum' option.			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 11072 existing households, which equates to an approximate population of 26100. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 12422 households and an approximate population of 29200.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 53 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike	NOT MET	PARTIAL	MET

<p>the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 26100 people and 48 noise sensitive buildings.</p> <p>The estimated track length is 53km (29Nm).</p> <p>Option 4 overflies a total of 53 noise sensitive receptors and 1350 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.5 RW 22 – 2,500ft Transition Option 5

Design Principle Evaluation		
Option Name: Transition Option 5 RW 22 – 2,500ft FAF		REJECT
<p><i>Option Description:</i></p> <p>Option 5 has an IAF at 7,000ft to the north west of the airport which is close to the northern element of the current LOREL hold. It was designed as a mirror to Option A3 (see 'Viable but Poor Fit Options').</p> <p>It has been designed as an option that has minimum change from current operations and may also offer potential for noise relief if combined with Option 12.</p> <p>From this position this option enables a CDA at 3.9% (2.2°) which is slightly lower than the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns east from a position just West of Royston and routes to the North of Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,500ft final approach.</p>		
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>	MET	

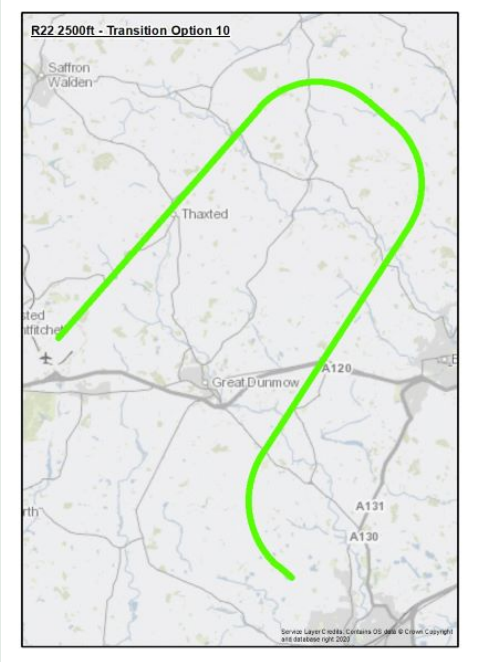
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			



DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route option is a PBN arrival route, is flyable and supports a continuous descent approach.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> Option 5 overflies 6422 existing households, which equates to an approximate population of 14900. This is less than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 7022 households and an approximate population of 16400.			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 5 overflies a total of 48 noise sensitive receptors. This is fewer than the 'do minimum' option.			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will	NOT MET	PARTIAL	MET

<p>take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 currently overflies a population of approximately 14900 people and 43 noise sensitive buildings.</p> <p>The estimated track length is 58km (31Nm).</p> <p>Option 5 overflies a total of 48 noise sensitive receptors and 600 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.6 RW 22 – 2,500ft Transition Option 10

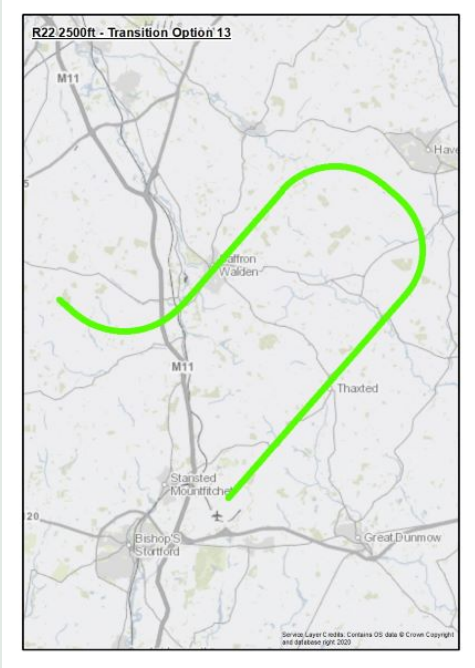
Design Principle Evaluation			
Option Name: Transition Option 10 RW 22 – 2,500ft FAF	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 10 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold. It has been designed as an option that offers potential for noise relief if combined with Option 1.</p> <p>From this position this option enables a CDA at 3.8% (2.2°) which is slightly lower than the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east onto a downwind track and routes further to the East than Option 1 to limit the impact on Great Dunmow and to the West of Braintree. It then turns left onto base leg and establishes aircraft on a 2,500ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 10. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 overflies 3908 existing households, which equates to an approximate population of 9900. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 10758 households and an approximate population of 27300.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 10 overflies a total of 28 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 10 currently overflies a population of approximately 9900 people and 25 noise sensitive buildings.</p> <p>The estimated track length is 53km (29Nm).</p> <p>Option 10 overflies a total of 28 noise sensitive receptors and 6850 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 10 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.7 RW 22 – 2,500ft Transition Option 13

Design Principle Evaluation			
Option Name: RW 22 – 2,500ft Transition Option 13		REJECT	
<p><i>Option Description:</i></p> <p>Option 13 has an IAF at 7,000ft to the North West of the airport in the vicinity of Langley Upper Green.</p> <p>From this position this option enables a CDA at 4.2% (2.4°) which is within the optimal range for low noise approaches and the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>This option has fewer track miles for runway 22 operations (than those that are equidistant for both runways), but this results in slightly longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>From the IAF the route turns north east and routes overhead Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,500ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

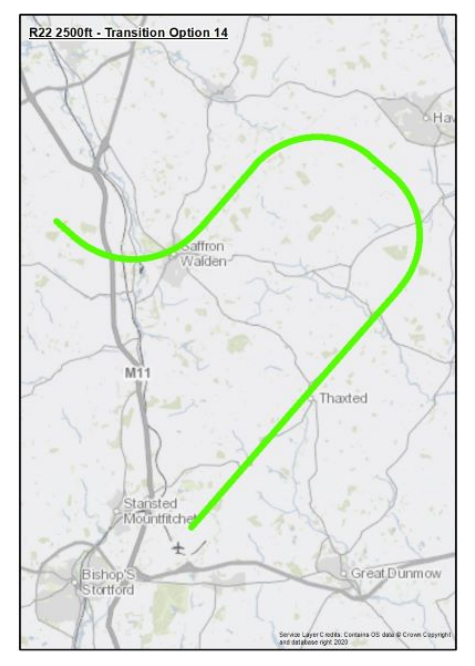
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 13. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available</p>	NOT MET	PARTIAL	MET



aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 overflies 10468 existing households, which equates to an approximate population of 24600. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 11818 households and an approximate population of 27700.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 13 overflies a total of 54 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 currently overflies a population of approximately 24600 people and 48 noise sensitive buildings.</p> <p>The estimated track length is 49km (26Nm).</p> <p>Option 13 overflies a total of 54 noise sensitive receptors and 1350 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 13 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.8 RW 22 – 2,500ft Transition Option 14

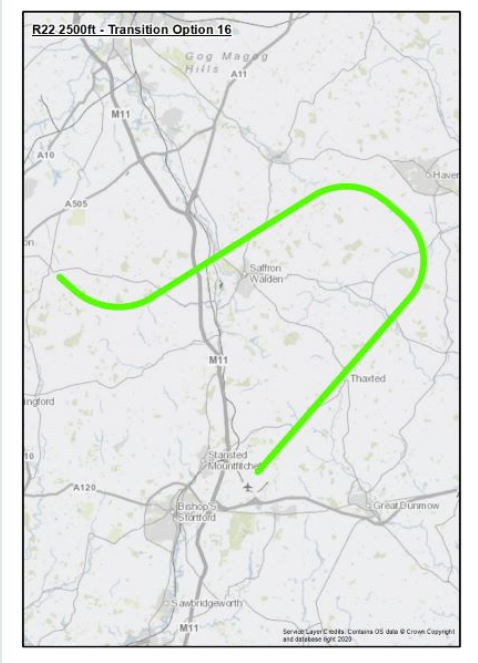
Design Principle Evaluation			
Option Name: RW 22 – 2,500ft Transition Option 14	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 14 has an IAF at 7,000ft to the North West of the airport in the vicinity of Strethall and has been designed as the shortest PANS-OPS compliant route to runway 22 for this joining point.</p> <p>As a result, this option has fewer track miles for runway 22 operations, but this results in longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>This option enables a CDA at 5% (2.9°) which is at the upper limits for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east with a short stabilisation segment and routes and then turns right onto base leg and establishes aircraft on a 2,500ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 14. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 overflies 9198 existing households, which equates to an approximate population of 21400. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 10448 households and an approximate population of 24400.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 14 overflies a total of 49 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 currently overflies a population of approximately 21400 people and 44 noise sensitive buildings.</p> <p>The estimated track length is 44km (24Nm).</p> <p>Option 14 overflies a total of 49 noise sensitive receptors and 1250 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 14 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.9 RW 22 – 2,500ft Transition Option 16

Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 16	ACCEPT		
<p><i>Option Description:</i></p> <p>Option 16 has an IAF at 7,000ft to the North West of the airport in the vicinity of Great Chishill.</p> <p>From this position this option enables a CDA at 4% (2.3°) which is close to the optimal gradient for low noise approaches and the range defined for CDAs defined within CAA and ICAO guidance.</p> <p>This option has fewer track miles for runway 22 operations (than those that are equidistant for both runways), but this results in slightly longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>From the IAF the route turns north east and routes to avoid Saffron Walden and then turns right onto base leg and establishes aircraft on a 2,500ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace</p>	NOT MET	PARTIAL	MET

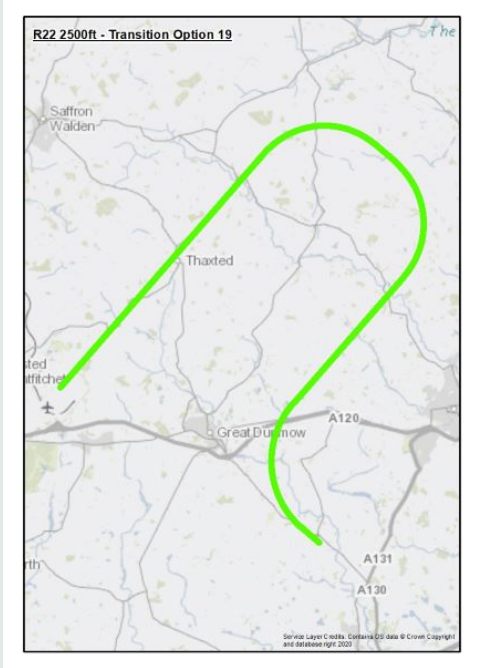
<p>Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 16. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			



<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 overflies 2551 existing households, which equates to an approximate population of 6200. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 2751 households and an approximate population of 6600.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 16 overflies a total of 25 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			

<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government’s altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 currently overflies a population of approximately 6200 people and 22 noise sensitive buildings.</p> <p>The estimated track length is 51km (28Nm).</p> <p>Option 16 overflies a total of 25 noise sensitive receptors and 200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 16 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a ‘good fit’. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.10 RW 22 – 2,500ft Transition Option 19

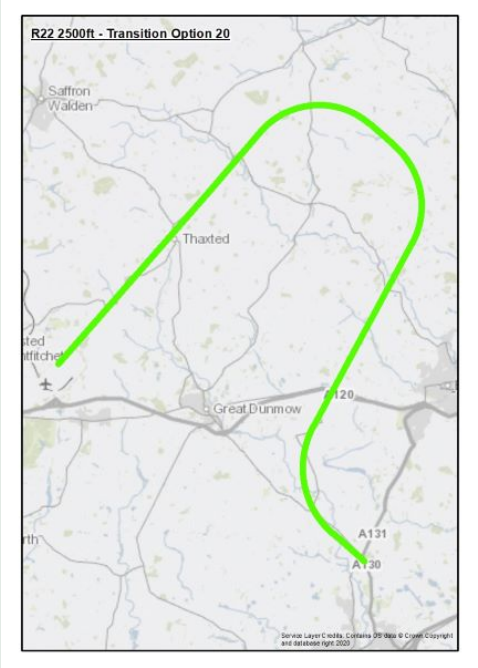
Design Principle Evaluation			
Option Name: RW 22 – 2,000ft Transition Option 19		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 19 has an IAF at 7,000ft to the south-east of the airport which is almost equidistant to each runway threshold but with a slightly shorter track for runway 22. It has been designed as an option that offers potential for noise relief if combined with Option 20.</p> <p>From this position this option enables a CDA at 4.3% (2.5°) which is the optimal for low noise approaches and within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns North East onto a downwind track and routes further to the East of Great Dunmow and West of Braintree. It then turns left onto base leg and establishes aircraft on a 2,500ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 19. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 overflies 3753 existing households, which equates to an approximate population of 9500. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 13153 households and an approximate population of 33300.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 19 overflies a total of 22 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 19 currently overflies a population of approximately 9500 people and 19 noise sensitive buildings.</p> <p>The estimated track length is 49km (26Nm).</p> <p>Option 19 overflies a total of 22 noise sensitive receptors and 9400 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 19 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.11 RW 22 – 2,500ft Transition Option 20

Design Principle Evaluation			
Option Name: RW 22 – 2,500ft Transition Option 20		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 20 has an IAF at 7,000ft to the south-east of the airport close to Option 19 which is almost equidistant to each runway threshold but with a slightly shorter track for runway 22. It has been designed to offer potential for noise relief if combined with Option 19.</p> <p>From this position this option enables a CDA at 4.1% (2.3°) which close to the optimal for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns North East onto a downwind track and routes further to the East of Great Dunmow and West of Braintree. It then turns left onto base leg and establishes aircraft on a 2,500ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

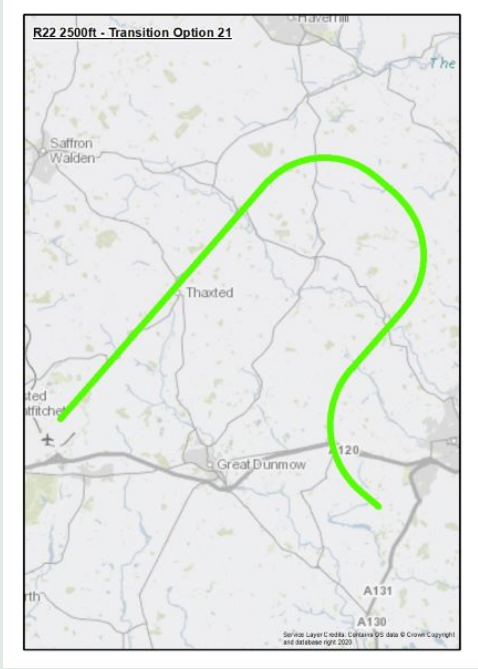
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 20. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET



<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 overflies 3924 existing households, which equates to an approximate population of 9300. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 11674 households and an approximate population of 27800.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 20 overflies a total of 31 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 20 currently overflies a population of approximately 9300 people and 28 noise sensitive buildings.</p> <p>The estimated track length is 50km (27Nm).</p> <p>Option 20 overflies a total of 31 noise sensitive receptors and 7750 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 20 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.12 RW 22 – 2,500ft Transition Option 21

Design Principle Evaluation			
Option Name: RW 22 – 2,500ft Transition Option 21		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 21 has an IAF at 7,000ft to the East of the airport to the South East of Braintree and has been designed as the shortest PANS-OPS compliant route to runway 22 for this joining point and may offer potential for noise relief when combined with Option 22.</p> <p>As a result, this option has fewer track miles for runway 22 operations, but this results in longer track miles and a shallower CDA for the reciprocal route from this position to runway 04.</p> <p>This option enables a CDA at 5% (2.9°) which is slightly above the upper limits for low noise approaches but within the recommended range for CDAs within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east with a short stabilisation segment and routes and then turns left onto base leg and establishes aircraft on a 2,500ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation</p>	NOT MET	PARTIAL	MET

Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 21. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available	NOT MET	PARTIAL	MET

aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 overflies 2658 existing households, which equates to an approximate population of 6300. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 15558 households and an approximate population of 37000.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 21 overflies a total of 17 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 currently overflies a population of approximately 6300 people and 13 noise sensitive buildings.</p> <p>The estimated track length is 44km (24Nm).</p> <p>Option 21 overflies a total of 17 noise sensitive receptors and 12900 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 21 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 25.13 RW 22 - 2,500ft Transition Options Viable but Poor Fit

### 25.13.1 RWY 22 - 2,500ft Transition Option A3

IAF-3 is south and east of the aerodrome, equidistant to both runway thresholds but at a greater distance than other equidistant options. It facilitates a CDA but with a sub-optimum profile.

Reason for exclusion: Design Principles Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between STN arrivals and interactions with traffic to and from other airports on routes M197 and Q295 and the network joining points for LTN, LCY and LHR departing traffic. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is efficiency and the and the expeditious flow of traffic including greater runway throughput. By creating interactions with routes traffic for other airports this option would not comply with this initiative (and therefore the Policy DP) as it has the potential to require ATC interaction which would reduce this efficiency.

### 25.13.2 RWY 22 - 2,500ft Transition Option B6

IAF-6 east of the aerodrome and west of Colchester. The IAF lies outside of the 2,500ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Design Principles Policy and Safety.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the CAA Airspace Containment Policy. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

### 25.13.3 RWY 22 - 2,500ft Transition Option C7

IAF-7 is north east of the aerodrome mid-way between Cambridge and Newmarket to the north east of STN. It was designed as a mirror for Option B6. The IAF lies outside of the 2,500ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Design Principle Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the CAA Airspace Containment Policy. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach

(CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **25.13.4 RWY 22 - 2,500ft Transition Option D8**

IAF-8 is positioned south-east of the aerodrome between Chelmsford and Braintree. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **25.13.5 RWY 22 - 2,500ft Transition Option E9**

IAF-9 is positioned north of aerodrome to the south west of Duxford and north of STN. This was designed as a mirror of Option D8. This option introduces acceptable track miles and CDA for this runway but not for 04. There is also the potential of interaction with AD6 arrival routes operated by Luton Airport. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **25.13.6 RWY 22 - 2,500ft Transition Option F11**

IAF-11 is north east of the aerodrome close to the current ABBOT hold. IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Design Principle Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **25.13.7 RWY 22 - 2,500ft Transition Option G12**

IAF-12 is positioned west of the aerodrome close to the current LOREL hold. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative



(and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 25.13.8 RWY 22 - 2,500ft Transition Option H15

IAF-15 is positioned to the north to the east of Duxford and to the north west of STN. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Design Principle Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the Minimum Stabilisation Distance (MSD) requirements within PANS-OPS. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 25.13.9 RWY 22 - 2,500ft Transition Option I17

IAF 17 is positioned to the west of Duxford and north of the aerodrome. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 25.13.10 RWY 22 - 2,500ft Transition Option J18

IAF 18 is positioned to the north of Royston at the northern boundary of the design envelope. The IAF is outside of the 2,500ft design area so CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 25.13.11 RWY 22 - 2,500ft Transition Option K22

IAF 22 is positioned to the south of Braintree. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 25.13.12 RWY 22 - 2,500ft Transition Option L23

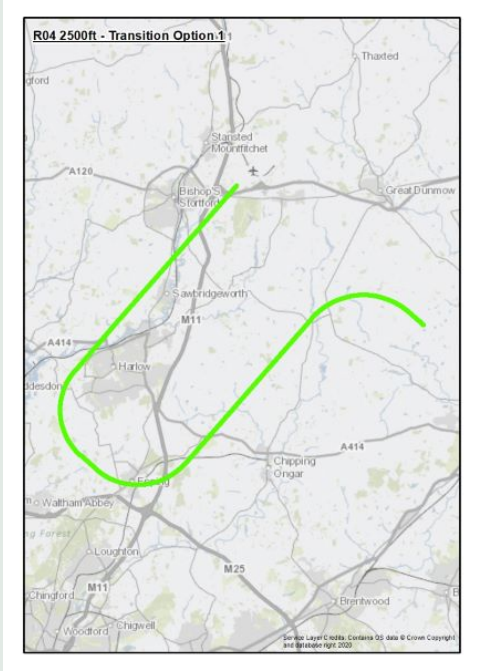
IAF 23 positioned to the south east of the aerodrome and north east of Chelmsford. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

# 26 RW 04 – 2,500ft Transitions

## 26.1 RW 04 – 2,500ft Transition Option 1

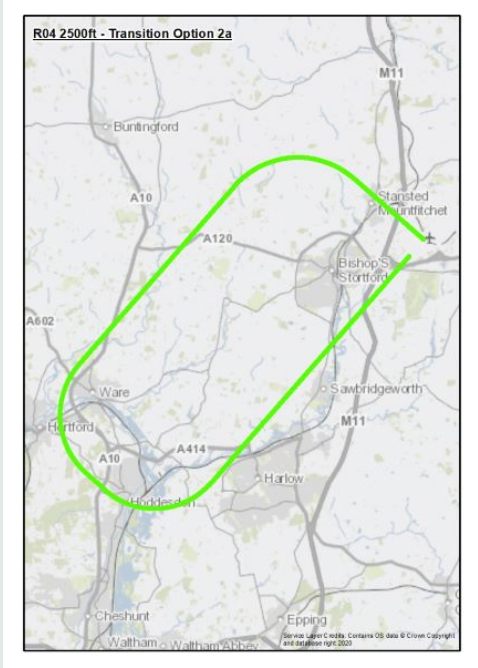
Design Principle Evaluation			
Option Name: Transition Option 1 RW 04 2,500ft FAF		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 1 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold.</p> <p>From this position this option enables a CDA at 3.8% (2.2°) which is just below the optimal for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west onto a downwind track parallel with the final approach and close to North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,500ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			

DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 8978 existing households, which equates to an approximate population of 21000. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 10778 households and an approximate population of 25200.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 41 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will	NOT MET	PARTIAL	MET

<p>take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 21000 people and 37 noise sensitive buildings.</p> <p>The estimated track length is 53km (29Nm).</p> <p>Option 1 overflies a total of 41 noise sensitive receptors and 1800 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 26.2 RW 04 – 2,500ft Transition Option 2a

Design Principle Evaluation			
Option Name: Transition Option 2a RW 04 – 2,500ft FAF		REJECT	
<p><i>Option Description:</i></p> <p>This transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the SE and turn downwind left.</p> <p>From this position this option enables a CDA at 3.4% (2°) which is just below the optimal for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route is heading north west and then turns south west onto a downwind track parallel with the final approach and routes outside of Ware at which point it turns left onto base leg and establishes aircraft on a 2,500ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

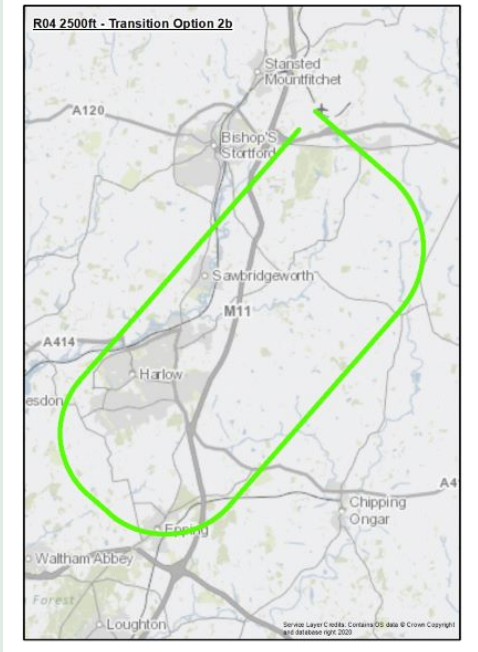
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2a. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			



DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a overflies 16492 existing households, which equates to an approximate population of 38500. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 19192 households and an approximate population of 44700.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2a overflies a total of 73 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will	NOT MET	PARTIAL	MET

<p>take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a currently overflies a population of approximately 38500 people and 61 noise sensitive buildings.</p> <p>The estimated track length is 57km (31Nm).</p> <p>Option 2a overflies a total of 73 noise sensitive receptors and 2700 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2a is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

### 26.3 RW 04 – 2,500ft Transition Option 2b

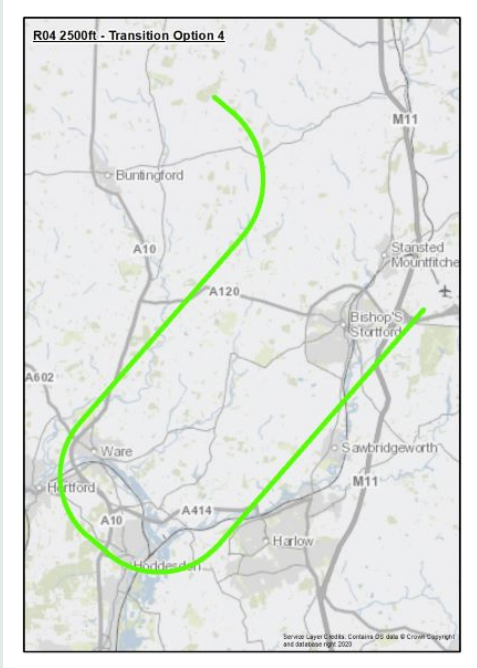
Design Principle Evaluation			
Option Name: Transition Option 2b RW 04 – 2,500ft FAF		ACCEPT	
<p><i>Option Description:</i></p> <p>This transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the NW and turn downwind right, and then turn left base onto the final approach.</p> <p>From this position this option enables a CDA at 3.4% (2°) which is just below the optimal for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route is heading south east and then turns south west onto a downwind track parallel with the final approach close to North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,500ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2b. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b overflies 11008 existing households, which equates to an approximate population of 26200. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 14208 households and an approximate population of 33700.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 2b overflies a total of 47 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 2b currently overflies a population of approximately 26200 people and 41 noise sensitive buildings.</p> <p>The estimated track length is 57km (31Nm).</p> <p>Option 2b overflies a total of 47 noise sensitive receptors and 3200 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2b is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 26.4 RW 04 – 2,500ft Transition Option 4

Design Principle Evaluation			
Option Name: RW 04 – 2,500ft FAF Transition Option 4		REJECT	
<p><i>Option Description:</i></p> <p>Option 4 has an IAF at 7,000ft to the north west of the airport which is equidistant to each runway threshold.</p> <p>From this position this option enables a CDA at 3.8% (2.2°) which is close to the optimal for low noise approaches and within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west onto a downwind track parallel with the final approach and routes close to Ware at which point it turns left onto base leg and establishes aircraft on a 2,500ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

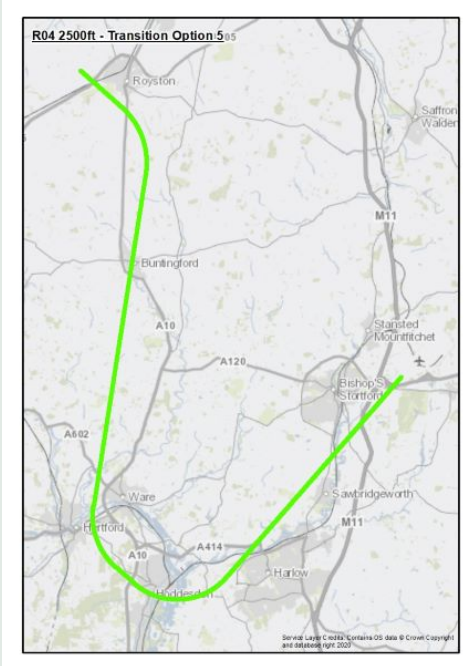
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET



facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 13865 existing households, which equates to an approximate population of 32000. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 15565 households and an approximate population of 35900.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 66 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 32000 people and 53 noise sensitive buildings.</p> <p>The estimated track length is 53km (29Nm).</p> <p>Option 4 overflies a total of 66 noise sensitive receptors and 1700 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 26.5 RW 04 – 2,500ft Transition Option 5

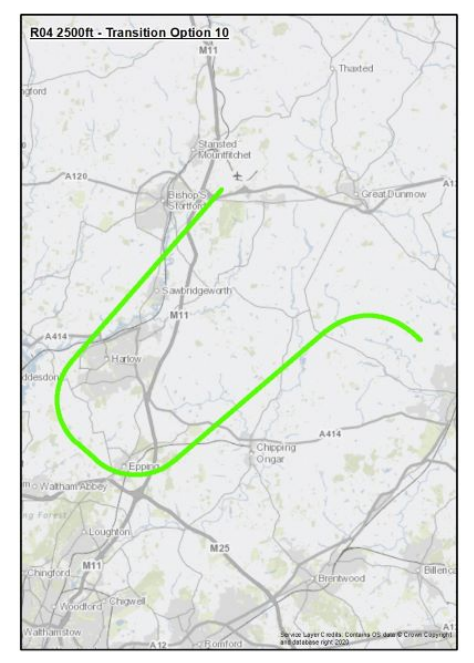
Design Principle Evaluation		
Option Name: RW 04 – 2,500ft FAF Transition Option 5		REJECT
<p><i>Option Description:</i></p> <p>Option 5 has an IAF at 7,000ft to the north west of the airport which is close to the northern element of the current LOREL hold. It has been designed as an option that has minimum change from current operations and may also offer potential for noise relief if combined with Option12.</p> <p>From this position this option enables a CDA at 3.3% (2°) which is lower than the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south from a position just West of Royston and routes just south of Buntingford and then turns left onto base leg close to Ware and establishes aircraft on a 2,500ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>		
		
DP <b>S</b> : Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.	NOT MET	PARTIAL
		MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p>		

At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 5. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p>			

Assessed in isolation, it supports CDO/CDA operations. The track to 7,000ft is longer than the 'do minimum' option.			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route option is a PBN arrival route, is flyable and supports a continuous descent approach.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> Option 5 overflies 17533 existing households, which equates to an approximate population of 40300. This is more than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 20083 households and an approximate population of 46200.			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 5 overflies a total of 70 noise sensitive receptors. This is fewer than the 'do minimum' option.			

<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 5 currently overflies a population of approximately 40300 people and 61 noise sensitive buildings.</p> <p>The estimated track length is 58km (31Nm).</p> <p>Option 5 overflies a total of 70 noise sensitive receptors and 2550 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 5 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 26.6 RW 04 – 2,500ft Transition Option 10

Design Principle Evaluation			
Option Name: Transition Option 10 RW 04 – 2,500ft FAF		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 10 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold. It has been designed as an option that offers potential for noise relief if combined with Option1.</p> <p>From this position this option enables a CDA at 3.8% (2.2°) which is close to the optimal for low noise approaches and within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west onto a downwind track and then turns right onto base leg close to Epping and establishes aircraft on a 2,500ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p>			

<p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 10. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 will overfly some new areas.</p>			



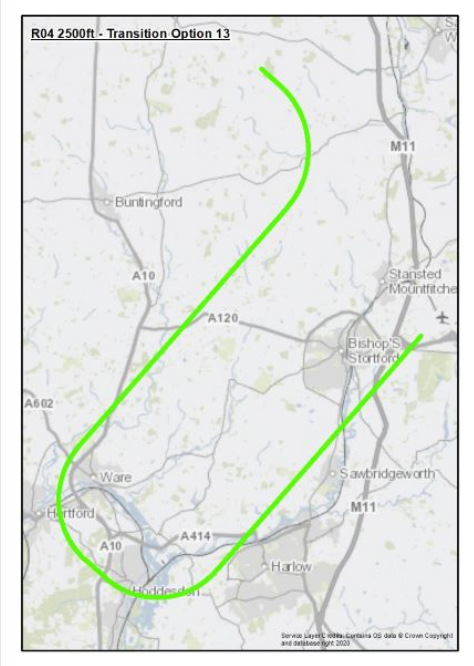
<p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 overflies 6101 existing households, which equates to an approximate population of 14100. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 7601 households and an approximate population of 17600.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and</p>	NOT MET	PARTIAL	MET

AONB), cultural or historic assets and sites providing care.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 10 overflies a total of 38 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 currently overflies a population of approximately 14100 people and 33 noise sensitive buildings.</p> <p>The estimated track length is 53km (29Nm).</p> <p>Option 10 overflies a total of 38 noise sensitive receptors and 1500 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 10 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET

*Summary of Qualitative Assessment:*

This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.

## 26.7 RW 04 – 2,500ft Transition Option 13

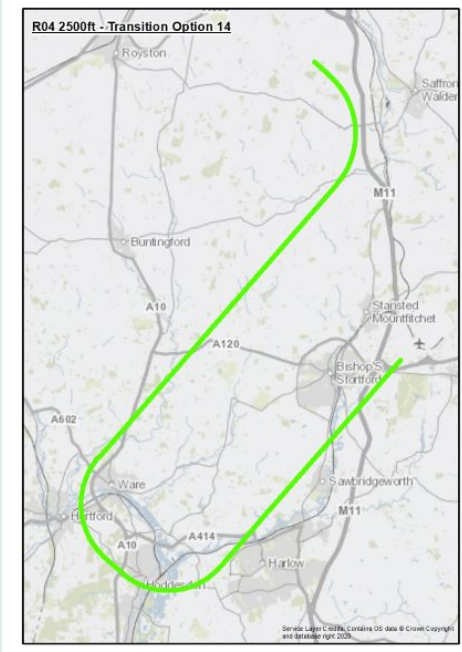
Design Principle Evaluation			
Option Name: RW 04 – 2,500ft Transition Option 13		REJECT	
<p><i>Option Description:</i></p> <p>Option 13 has an IAF at 7,000ft to the North West of the airport in the vicinity of Langley Upper Green. This option has a slight bias for runway 22 and this results in slightly longer track miles for this runway.</p> <p>From this position this option enables a CDA at 3.4% (2°) which is below the optimal for low noise approaches but within the acceptable range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west on a track parallel with the final approach and then turns left onto base leg aircraft on a 2,500ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the</p>	NOT MET	PARTIAL	MET

<p>FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 13. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is the same length as the 'do minimum' option.</p>			

<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 overflies 13385 existing households, which equates to an approximate population of 30900. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 14985 households and an approximate population of 34500.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 13 overflies a total of 65 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			

<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government’s altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 13 currently overflies a population of approximately 30900 people and 53 noise sensitive buildings.</p> <p>The estimated track length is 57km (31Nm).</p> <p>Option 13 overflies a total of 65 noise sensitive receptors and 1600 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 13 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a ‘good fit’. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 26.8 RW 04 – 2,500ft Transition Option 14

Design Principle Evaluation			
Option Name: RW 04 – 2,500ft Transition Option 14		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 14 has an IAF at 7,000ft to the North West of the airport in the vicinity of Strehall to create the shortest viable route for runway 22 which results in longer track miles for this runway.</p> <p>For 04 this option enables a CDA at 3.1% (1.7°) which is below the optimal for low noise approaches. Whilst this is within the acceptable range for CDAs defined within ICAO guidance, the potential for level segments exists.</p> <p>From the IAF the route turns south west on a track parallel with the final approach and then turns left onto base leg close to Ware and establishes aircraft on a 2,500ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET

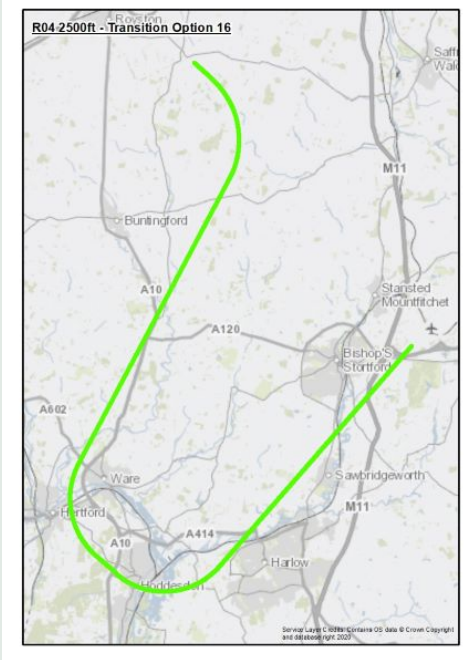


<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 14. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 14 overflies 12392 existing households, which equates to an approximate population of 28600. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 13942 households and an approximate population of 32200.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 14 overflies a total of 61 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 14 currently overflies a population of approximately 28600 people and 49 noise sensitive buildings.</p> <p>The estimated track length is 62km (33Nm).</p> <p>Option 14 overflies a total of 61 noise sensitive receptors and 1550 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 14 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 26.9 RW 04 – 2,500ft Transition Option 16

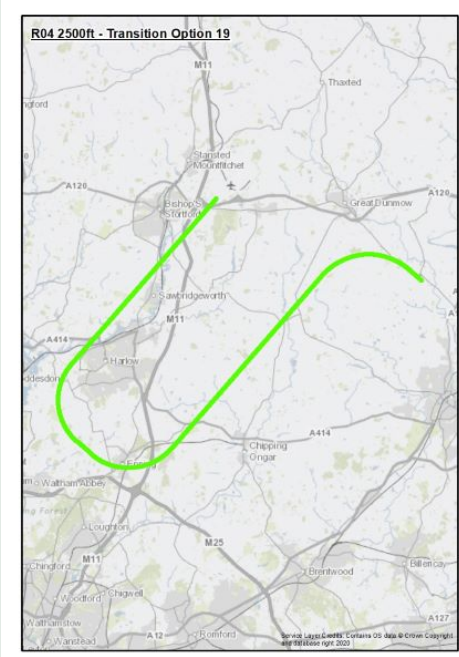
Design Principle Evaluation				
Option Name: RW 04 – 2,500ft Transition Option 16		ACCEPT		
<p><i>Option Description:</i></p> <p>Option 16 has an IAF at 7,000ft to the North West of the airport in the vicinity of Great Chishill. This gives a slight bias for runway 22 which results in slightly longer track miles for this runway.</p> <p>From this position this option enables a CDA at 3.5% (2.°) which is slightly below the optimal for low noise approaches but within the range defined for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west and routes close to Puckeridge and then turns left onto base leg close to Ware and establishes aircraft on a 2,500ft final approach.</p>				
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET	
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>				
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET	

<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 16. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET

<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 16 overflies 13936 existing households, which equates to an approximate population of 31900. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 15636 households and an approximate population of 35800.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 16 overflies a total of 67 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>Option 16 currently overflies a population of approximately 31 900 people and 58 noise sensitive buildings.</p> <p>The estimated track length is 56km (30Nm).</p> <p>Option 16 overflies a total of 67 noise sensitive receptors and 1 700 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 16 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 26.10 RW 04 – 2,500ft Transition Option 19

Design Principle Evaluation			
Option Name: RW 04 – 2,500ft Transition Option 19		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 19 has an IAF at 7,000ft to the south-east of the airport which is almost equidistant to each runway threshold but with a slightly shorter track for runway 22. It has been designed as an option that offers potential for noise relief if combined with Option 20.</p> <p>From this position this option enables a CDA at 3.4% (1.95°) which is below the optimal for low noise approaches. Although within the acceptable range defined for CDAs defined within CAA and ICAO guidance the potential for level segments exists.</p> <p>From the IAF the route turns south west onto a downwind track parallel with the final approach and close to North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,500ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

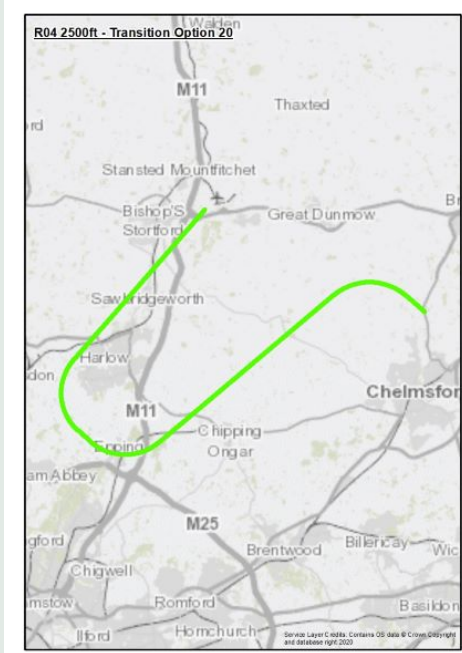


taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 19. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 overflies 8617 existing households, which equates to an approximate population of 20100. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 10117 households and an approximate population of 23600.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 19 overflies a total of 40 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 19 currently overflies a population of approximately 20100 people and 35 noise sensitive buildings.</p> <p>The estimated track length is 57km (31Nm).</p> <p>Option 19 overflies a total of 40 noise sensitive receptors and 1500 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 19 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 26.11 RW 04 – 2,500ft Transition Option 20

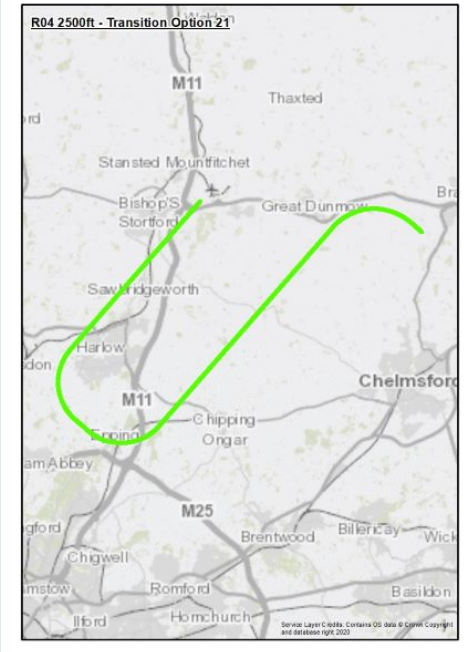
Design Principle Evaluation			
Option Name: RW 04 – 2,500ft Transition Option 20		ACCEPT	
<p><i>Option Description:</i></p> <p>Option 20 has an IAF at 7,000ft to the south-east of the airport close to Option 19 which is almost equidistant to each runway. It has been designed to offer potential for noise relief if combined with Option 19.</p> <p>From this position this option enables a CDA at 3.3% (1.9°) which is below the optimal for low noise approaches. Although within the acceptable range defined for CDAs defined within CAA and ICAO guidance the potential for level segments exists.</p> <p>From the IAF the route turns south west onto a downwind track to the south of High Easter and close to North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,500ft final approach.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 20. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 overflies 8795 existing households, which equates to an approximate population of 20500. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 12695 households and an approximate population of 29500.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 20 overflies a total of 43 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 20 currently overflies a population of approximately 20500 people and 39 noise sensitive buildings.</p> <p>The estimated track length is 58km (31Nm).</p> <p>Option 20 overflies a total of 43 noise sensitive receptors and 3900 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 20 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 26.12 RW 04 – 2,500ft Transition Option 21

Design Principle Evaluation			
Option Name: RW 04 – 2,500ft Transition Option 21		ACCEPT	
<p>Option 21 has an IAF at 7,000ft to the East of the airport to the south east of Braintree and has been designed as the shortest PANS-OPS compliant route to runway 22. This results in longer track miles for this runway. It may offer potential for noise relief when combined with Option 22.</p> <p>This option enables a CDA at 3% (1.7°) which is below the optimal for low noise approaches. Although within the acceptable range defined for CDAs defined within CAA and ICAO guidance the potential for level segments exists.</p> <p>From the IAF the route turns south west to the south of Great Dunmow onto a downwind track parallel with the final approach and close to North Weald aerodrome. It then turns right onto base leg and establishes aircraft on a 2,000ft final approach.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET



taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 is a PBN route and is deemed to be compliant with the UK’s obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is closer to the runway 22 threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 21. This option is deemed to take account of the needs of other airspace users.</p>			
<p><b>DP D:</b> The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p><b>DP C:</b> Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and</p>	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 overflies 10016 existing households, which equates to an approximate population of 24200. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 14016 households and an approximate population of 33800.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 21 overflies a total of 47 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 21 currently overflies a population of approximately 24200 people and 41 noise sensitive buildings.</p> <p>The estimated track length is 62km (33Nm).</p> <p>Option 21 overflies a total of 47 noise sensitive receptors and 4000 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 21 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 26.13 RW 04 - 2,500ft Transitions: Viable but Poor Fit Options

### 26.13.1 RWY 04 - 2,500ft Transition Option A3

IAF-3 is south and east of the aerodrome, equidistant to both runway thresholds but at a greater distance than other equidistant options. It facilitates a CDA but with a sub-optimum profile.

Reason for exclusion: Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between STN arrivals and interactions with traffic to and from other airports on routes M197 and Q295 and the network joining points for LTN, LCY and LHR departing traffic. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is efficiency and the and the expeditious flow of traffic including greater runway throughput. By creating interactions with routes traffic for other airports this option would not comply with this initiative (and therefore the Policy DP) as it has the potential to require ATC interaction which would reduce this efficiency.

### 26.13.2 RWY 04 - 2,500ft Transition Option B6

IAF-6 east of the aerodrome and west of Colchester. The IAF lies outside of the 2,500ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy and Safety.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the CAA Airspace Containment Policy. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

### 26.13.3 RWY 04 - 2,500ft Transition Option C7

IAF-7 is north east of the aerodrome mid-way between Cambridge and Newmarket to the north east of STN. It was designed as a mirror for Option B6. The IAF lies outside of the 2,500ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the CAA Airspace Containment Policy. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach

(CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **26.13.4 RWY 04 - 2,500ft Transition Option D8**

IAF-8 is positioned south-east of the aerodrome between Chelmsford and Braintree. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **26.13.5 RWY 04 - 2,500ft Transition Option E9**

IAF-9 is positioned north of aerodrome to the south west of Duxford and north of STN. This was designed as a mirror of Option D8. This option introduces acceptable track miles and CDA for this runway but not for 04. There is also the potential of interaction with AD6 arrival routes operated by Luton Airport. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **26.13.6 RWY 04 - 2,500ft Transition Option F11**

IAF-11 is north east of the aerodrome close to the current ABBOT hold. IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **26.13.7 RWY 04 - 2,500ft Transition Option G12**

IAF-12 is positioned west of the aerodrome close to the current LOREL hold. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative

(and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 26.13.8 RWY 04 - 2,500ft Transition Option H15

IAF-15 is positioned to the north to the east of Duxford and to the north west of STN. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the Minimum Stabilisation Distance (MSD) requirements within PANS-OPS. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 26.13.9 RWY 04 - 2,500ft Transition Option I17

IAF 17 is positioned to the west of Duxford and north of the aerodrome. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 26.13.10 RWY 04 - 2,500ft Transition Option J18

IAF 18 is positioned to the north of Royston at the northern boundary of the design envelope. The IAF is outside of the 2,500ft design area so CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

### 26.13.11 RWY 04 - 2,500ft Transition Option K22

IAF 22 is positioned to the south of Braintree. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

### 26.13.12 RWY 04 - 2,500ft Transition Option L23

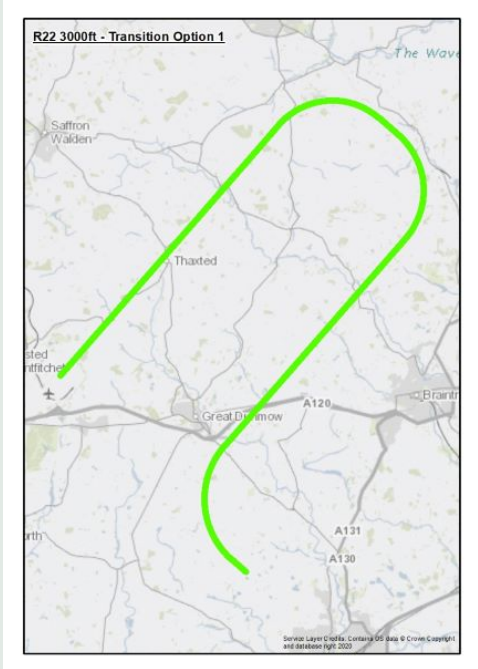
IAF 23 positioned to the south east of the aerodrome and north east of Chelmsford. The IAF is outside of the 2,500ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

# 27 RW 22 – 3,000ft Transitions

## 27.1 RW 22 – 3,000ft Transition Option 1

Design Principle Evaluation			
Option Name: RW 22 – 3,000ft Transition Option 1		REJECT	
<p><i>Option Description:</i></p> <p>Option 1 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold.</p> <p>From this position there is an equal distance between each runway threshold which enables a CDA at 3.1% (1.8°) which is below the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes west of Braintree. It then turns left onto base leg and establishes aircraft on a 3,000ft final approach.</p> <p>The nominal track routes outside of the existing CAS for the theoretical descent profile unless a specific altitude restriction is placed to be explicitly above the LTMA A base (3,500ft) before crossing into the CTA.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p>			

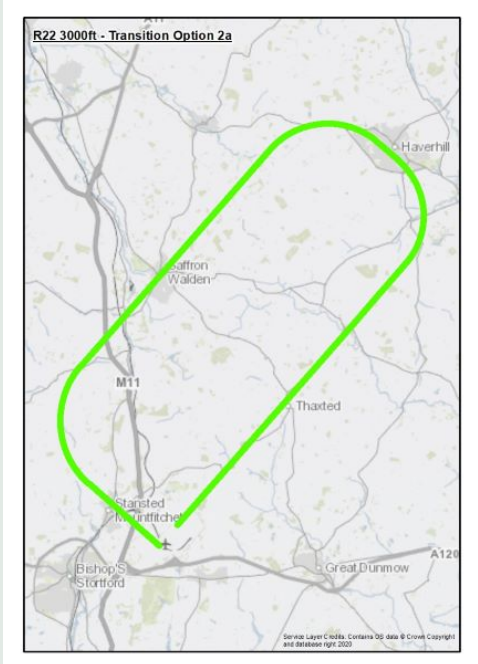


At this stage, it is foreseen that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> Option 1 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it has been determined that the scope to reduce the volume of controlled airspace is not offered by Option 1. This option is deemed to take account of the needs of other airspace users."</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p>			

<p>Assessed in isolation, it supports CDO/CDA operations. The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> Option 1 overflies 4237 existing households, which equates to an approximate population of 10000. This is more than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 13987 households and an approximate population of 32900.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 1 overflies a total of 23 noise sensitive receptors. This is fewer than the 'do minimum' option.</p>			

<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 10000 people and 19 noise sensitive buildings.</p> <p>The estimated track length is 59km (32Nm).</p> <p>Option 1 overflies a total of 23 noise sensitive receptors and 9750 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1's nominal track extends beyond the existing boundary of controlled airspace and therefore this route option would not be contained.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 27.2 RW 22 – 3,000ft Transition Option 2a

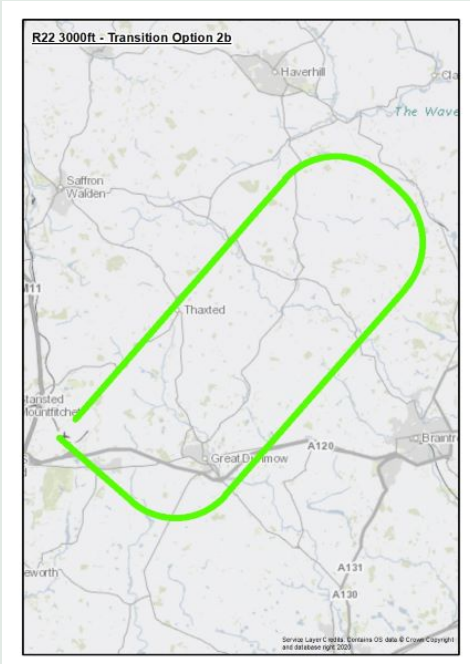
Design Principle Evaluation			
Option Name: RW 22 – 3,000ft Transition Option 2a		REJECT	
<p><i>Option Description:</i></p> <p>This central transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the SE and turn downwind right, and then turn right base onto the final approach.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables a CDA at 2.8% (1.6°) for both runways which is significantly below the range for low noise approaches but remains within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes over Saffron Walden. It then turns right over Haverhill onto base leg and establishes aircraft on a 3,000ft final approach.</p> <p>The nominal track routes outside of the existing CAS for the theoretical descent profile and unless a specific altitude restriction is placed to be explicitly above the LTMA A base (3,500ft) before crossing into the CTA</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p>			

At this stage, it is foreseen that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it has been determined that the scope to reduce the volume of controlled airspace is not offered by Option 2a. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p>			

<p>Assessed in isolation, it supports CDO/CDA operations. The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> Option 2a overflies 21504 existing households, which equates to an approximate population of 51900. This is more than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 23704 households and an approximate population of 57200.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 2a overflies a total of 92 noise sensitive receptors. This is more than the 'do minimum' option.</p>			

<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a currently overflies a population of approximately 51900 people and 87 noise sensitive buildings.</p> <p>The estimated track length is 59km (32Nm).</p> <p>Option 2a overflies a total of 92 noise sensitive receptors and 2200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2a's nominal track extends beyond the existing boundary of controlled airspace and therefore this route option would not be contained.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

### 27.3 RW 22 – 3,000ft Transition Option 2b

Design Principle Evaluation			
Option Name: RW 22 – 3,000ft Transition Option 2b		REJECT	
<p><i>Option Description:</i></p> <p>This central transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the NW and turn downwind left, and then turn left base onto the final approach.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables a CDA at 2.8% (1.6°) for both runways which is significantly below the range for low noise approaches but remains within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes to the East of Great Dunmow and the West of Braintree. It then turns left onto base leg close to Ridgewell and establishes aircraft on a 3000ft final approach.</p> <p>The nominal track routes outside of the existing CAS for the theoretical descent profile unless a specific altitude restriction is placed to be explicitly above the LTMA A base (3,500ft) before crossing into the CTA.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p>			

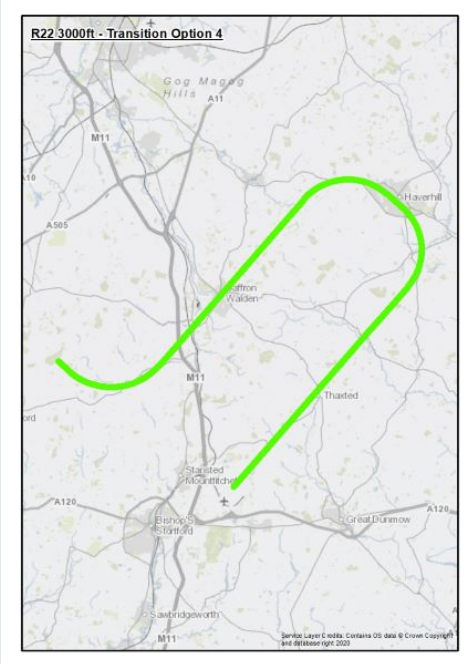


At this stage, it is foreseen that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it has been determined that the scope to reduce the volume of controlled airspace is not offered by Option 2b. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p>			

<p>This option overflies fewer noise sensitive receptors than the 'do minimum' option. Assessed in isolation, it supports CDO/CDA operations. The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p>DP <b>T</b>: Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p>DP <b>N1</b>: In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> Option 2b overflies 6465 existing households, which equates to an approximate population of 16500. This is more than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 17565 households and an approximate population of 44800.</p>			
<p>DP <b>N2</b>: The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p>DP <b>N3</b>: Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p>			

<p>An initial quantitative assessment has identified that Option 2b overflies a total of 29 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
<p><b>DP B:</b> Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b currently overflies a population of approximately 16500 people and 23 noise sensitive buildings.</p> <p>The estimated track length is 64km (35Nm).</p> <p>Option 2b overflies a total of 29 noise sensitive receptors and 11100 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2b's nominal track extends beyond the existing boundary of controlled airspace and therefore this route option would not be contained.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 27.4 RW 22 – 3,000ft Transition Option 4

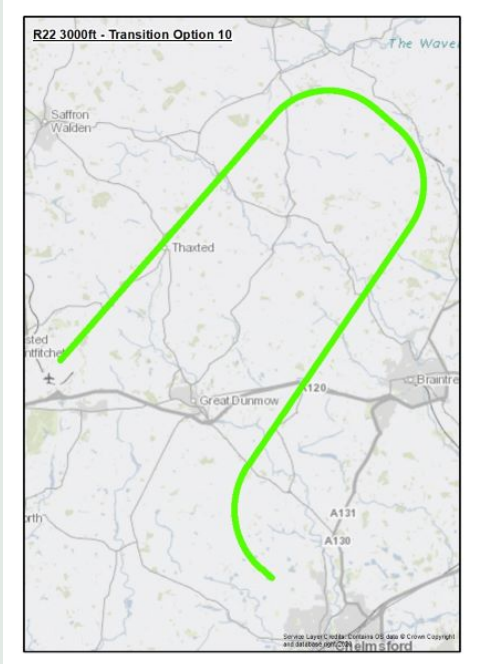
Design Principle Evaluation			
Option Name: RW 22 – 3,000ft Transition Option 4		REJECT	
<p><i>Option Description:</i></p> <p>Option 4 has an IAF at 7,000ft to the north west of the airport which is equidistant to each runway threshold.</p> <p>From this position there is an equal distance between each runway threshold which enables a CDA at 3.1% (1.8°) which is below the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east onto a downwind track parallel with the final approach and routes close to Saffron Walden. It then turns right over Haverhill onto base leg and establishes aircraft on a 3,000ft final approach.</p> <p>The nominal track routes outside of the existing CAS for the theoretical descent profile unless a specific altitude restriction is placed to be explicitly above the LTMA A base (3,500ft) before crossing into the CTA.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is foreseen that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation</p>	NOT MET	PARTIAL	MET

Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it has been determined that the scope to reduce the volume of controlled airspace is not offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 18491 existing households, which equates to an approximate population of 44500. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 19691 households and an approximate population of 47500.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 85 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET

emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 44500 people and 79 noise sensitive buildings.</p> <p>The estimated track length is 63km (34Nm).</p> <p>Option 4 overflies a total of 85 noise sensitive receptors and 1200 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4's nominal track extends beyond the existing boundary of controlled airspace and therefore this route option would not be contained.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 27.5 RW 22 – 3,000ft Transition Option 10

Design Principle Evaluation			
Option Name: RW 22 – 3,000ft Transition Option 10		REJECT	
<p><i>Option Description:</i></p> <p>Option 10 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold. It has been designed as an option that offers potential for noise relief if combined with Option 1.</p> <p>From this position there is an equal distance between each runway threshold which enables a CDA at 3.1% (1.8°) which is below the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns north east onto a downwind track and routes further to the East than Option 1 to limit the impact on Great Dunmow and to the West of Braintree. It then turns left onto base leg close to Ridgewell and establishes aircraft on a 3000ft final approach.</p> <p>The nominal track routes outside of the existing CAS for the theoretical descent profile and unless a specific altitude restriction is placed to be explicitly above the LTMA A base (3,500ft) before crossing into the CTA.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p>			



<p>At this stage, it is foreseen that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it has been determined that the scope to reduce the volume of controlled airspace is not offered by Option 10. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p>			

<p>This option overflies fewer noise sensitive receptors than the 'do minimum' option. Assessed in isolation, it supports CDO/CDA operations. The track to 7,000ft is longer than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> Option 10 overflies 4543 existing households, which equates to an approximate population of 10200. This is less than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 9793 households and an approximate population of 22000.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 10 overflies a total of 29 noise sensitive receptors.</p>			

This is fewer than the 'do minimum' option.			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 currently overflies a population of approximately 10200 people and 26 noise sensitive buildings.</p> <p>The estimated track length is 59km (32Nm).</p> <p>Option 10 overflies a total of 29 noise sensitive receptors and 5250 proposed dwelling(s).</p>			
DP <b>E</b> : We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 10's nominal track extends beyond the existing boundary of controlled airspace and therefore this route option would not be contained.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
DP <b>A</b> : Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 27.6 RW 22 - 3,000ft Transitions: Viable, but Poor Fit

### 27.6.1 RWY 22 – 3,000ft Transition Option A3

IAF-3 is south and east of the aerodrome, equidistant to both runway thresholds but at a greater distance than other equidistant options. It facilitates a CDA but with a sub-optimum profile.

Reason for exclusion: Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between STN arrivals and interactions with traffic to and from other airports on routes M197 and Q295 and the network joining points for LTN, LCY and LHR departing traffic. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is efficiency and the and the expeditious flow of traffic including greater runway throughput. By creating interactions with routes traffic for other airports this option would not comply with this initiative (and therefore the Policy DP) as it has the potential to require ATC interaction which would reduce this efficiency.

### 27.6.2 RWY 22 – 3,000ft Transition Option B5

IAF-5 is the north west of the aerodrome (close to the northern position of the current LOREL hold). It was designed as a mirrored version of Option A3. It introduces more track miles and does facilitate a Continuous Descent but with a sub-optimum profile.

However, there is also the potential of interaction with AD6 routes operated by Luton Airport. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact. In addition the potential interaction with Luton is not aligned to the initiative for efficiency and an expeditious flow of traffic. This interaction would lead to ATC intervention and a potential reduction in network efficiency.

### 27.6.3 RWY 22 – 3,000ft Transition Option C6

IAF-6 east of the aerodrome and west of Colchester. The IAF lies outside of the 3,000ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy and Safety.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the CAA Airspace Containment Policy. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative

(and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.4 RWY 22 – 3,000ft Transition Option D7**

IAF-7 is north east of the aerodrome mid-way between Cambridge and Newmarket to the north east of STN. It was designed as a mirror for Option B6. The IAF lies outside of the 3,000ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the CAA Airspace Containment Policy. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.5 RWY 22 – 3,000ft Transition Option E8**

IAF-8 is positioned south-east of the aerodrome between Chelmsford and Braintree. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.6 RWY 22 – 3,000ft Transition Option F9**

IAF-9 is positioned north of aerodrome to the south west of Duxford and north of STN. This was designed as a mirror of Option D8. This option introduces acceptable track miles and CDA for this runway but not for 04. There is also the potential of interaction with AD6 arrival routes operated by Luton Airport. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.7 RWY 22 – 3,000ft Transition Option G11**

IAF-11 is north east of the aerodrome close to the current ABBOT hold. IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Design Principle Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.8 RWY 22 – 3,000ft Transition Option H12**

IAF-12 is positioned west of the aerodrome close to the current LOREL hold. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.9 RWY 22 – 3,000ft Transition Option I13**

IAF 13 is positioned to the north west of the aerodrome close to BKY DVOR. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.10 RWY 22 – 3,000ft Transition Option J14**

IAF 14 is positioned to the north of the aerodrome close to Saffron Walden. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.11 RWY 22 – 3,000ft Transition Option K15**

IAF-15 is positioned to the north to the east of Duxford and to the north west of STN. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Design Principle Safety and Policy.

Safety: The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the Minimum Stabilisation Distance (MSD) requirements within PANS-OPS. As a result this option would not comply with the Safety DP.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 27.6.12 RWY 22 – 3,000ft Transition Option L16

IAF 16 is positioned to the north west of the aerodrome north of BKY DVOR. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 27.6.13 RWY 22 – 3,000ft Transition Option M17

IAF 17 is positioned to the west of Duxford and north of the aerodrome. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 27.6.14 RWY 22 – 3,000ft Transition Option N18

IAF 18 is positioned to the north of Royston at the northern boundary of the design envelope. The IAF is outside of the 3,000ft design area so CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.15 RWY 22 – 3,000ft Transition Option O19**

IAF-19 is positioned south-east of the aerodrome north of Chelmsford. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.16 RWY 22 – 3,000ft Transition Option P20**

IAF-20 is positioned south-east of the aerodrome north of Chelmsford. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.17 RWY 22 – 3,000ft Transition Option Q21**

IAF-21 south-east of the aerodrome east of Braintree. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **27.6.18 RWY 22 – 3,000ft Transition Option R22**

IAF 22 is positioned to the south of Braintree. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.



#### 27.6.19 RWY 22 – 3,000ft Transition Option S23


IAF 23 positioned to the south east of the aerodrome and north east of Chelmsford. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

# 28 RW 04 – 3,000ft Transitions

## 28.1 RW 04 - 3,000ft Transition Option 1

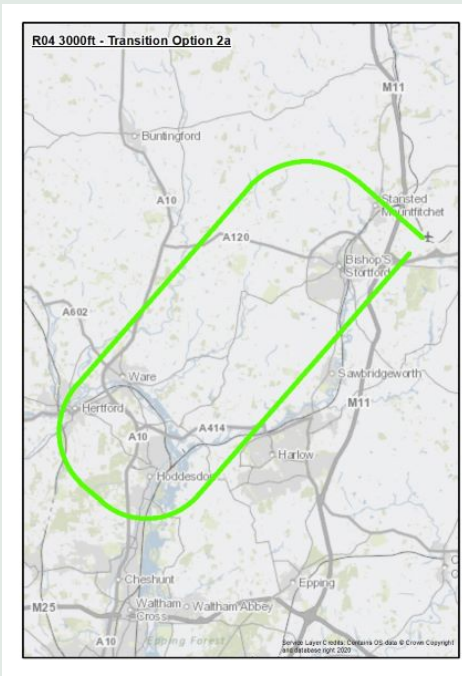
Design Principle Evaluation			
Option Name: RW 04 3,000ft Transition Option 1		REJECT	
<p><i>Option Description:</i></p> <p>Option 1 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold.</p> <p>From this position there is an equal distance between each runway threshold which enables a CDA at 3.1% (1.8°) which is below the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west onto a downwind track parallel with the final approach and turns right onto base leg south of Epping and establishes aircraft on a 3,000ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 1. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			

DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 overflies 8090 existing households, which equates to an approximate population of 19700. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 10140 households and an approximate population of 24700.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 1 overflies a total of 36 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will	NOT MET	PARTIAL	MET

<p>take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 1 currently overflies a population of approximately 19700 people and 21 noise sensitive buildings.</p> <p>The estimated track length is 59km (32Nm).</p> <p>Option 1 overflies a total of 36 noise sensitive receptors and 2050 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 1 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 28.2 RW 04 - 3,000ft Transition Option 2a

Design Principle Evaluation			
Option Name: RW 04 – 3,000ft Transition Option 2a		REJECT	
<p><i>Option Description:</i></p> <p>This transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the SE and turn downwind left.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables a CDA at 2.8% (1.6°) for both runways which is significantly below the range for low noise approaches but remains within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route is heading north west and then turns south west onto a downwind track parallel with the final approach and routes outside of Ware at which point it turns left onto base leg and establishes aircraft on a 3,000ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p>			

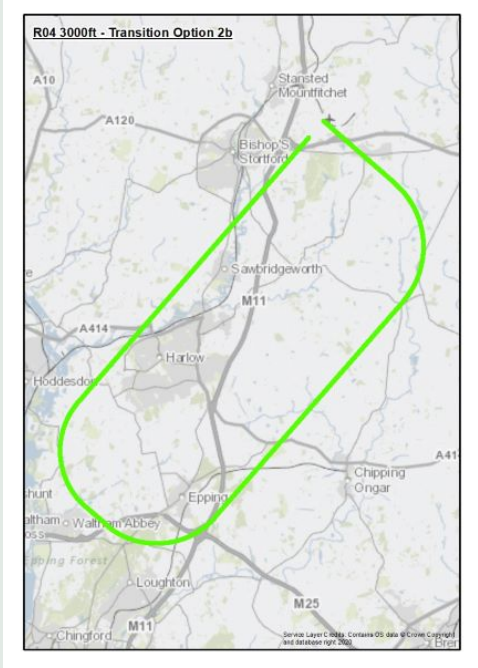
At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2a. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p>			

Assessed in isolation, it supports CDO/CDA operations. The track to 7,000ft is longer than the 'do minimum' option.			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route option is a PBN arrival route, is flyable and supports a continuous descent approach.			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> Option 2a overflies 19363 existing households, which equates to an approximate population of 44700. This is more than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 21813 households and an approximate population of 50300.			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 2a overflies a total of 76 noise sensitive receptors. This is more than the 'do minimum' option.			



<p>DP <b>B</b>: Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2a currently overflies a population of approximately 44700 people and 60 noise sensitive buildings.</p> <p>The estimated track length is 63km (34Nm).</p> <p>Option 2a overflies a total of 76 noise sensitive receptors and 2450 proposed dwelling(s).</p>			
<p>DP <b>E</b>: We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2a is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p>DP <b>A</b>: Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	<p>NOT MET</p>	<p>PARTIAL</p>	<p>MET</p>
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

### 28.3 RW 04 - 3,000ft Transition Option 2b

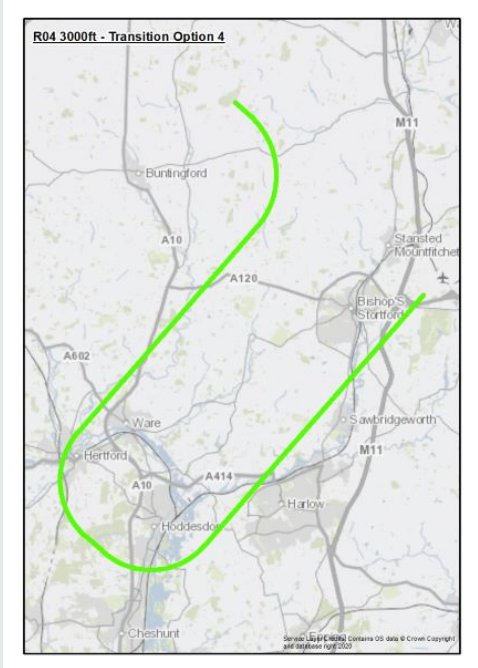
Design Principle Evaluation			
Option Name: RW 04 – 3,000ft Transition Option 2b		REJECT	
<p><i>Option Description:</i></p> <p>This transition option has an IAF at 7,000ft approximately overhead the aerodrome. Arrivals reach the 7,000ft routing from the NW and turn downwind right, and then turn left base onto the final approach.</p> <p>From this position there is an equal distance between each runway threshold, and this option enables a CDA at 2.8% (1.6°) for both runways which is significantly below the range for low noise approaches but remains within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route is heading south east and then turns south west onto a downwind track parallel with the final approach and then turns right onto base leg south of Epping and establishes aircraft on a 3,000ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas. It provides the optimum track miles and Continuous Descent Approaches.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p>			

At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.			
DP <b>P</b> : Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 2b. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p>			

<p>This option overflies more noise sensitive receptors than the 'do minimum' option. Assessed in isolation, it supports CDO/CDA operations. The track to 7,000ft is shorter than the 'do minimum' option.</p>			
<p><b>DP T:</b> Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
<p><b>DP N1:</b> In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> Option 2b overflies 10348 existing households, which equates to an approximate population of 25400. This is less than the 'do minimum' option. Taking account of proposed future development, this impact increases to approximately 13648 households and an approximate population of 33600.</p>			
<p><b>DP N2:</b> The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
<p><b>DP N3:</b> Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i> An initial quantitative assessment has identified that Option 2b overflies a total of 43 noise sensitive receptors.</p>			

This is more than the 'do minimum' option.			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 2b currently overflies a population of approximately 25400 people and 26 noise sensitive buildings.</p> <p>The estimated track length is 63km (34Nm).</p> <p>Option 2b overflies a total of 43 noise sensitive receptors and 3300 proposed dwelling(s).</p>			
DP <b>E</b> : We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 2b is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
DP <b>A</b> : Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 28.4 RW 04 - 3,000ft Transition Option 4

Design Principle Evaluation			
Option Name: RW 04 – 3,000ft Transition Option 4		REJECT	
<p><i>Option Description:</i></p> <p>Option 4 has an IAF at 7,000ft to the north west of the airport which is equidistant to each runway threshold.</p> <p>From this position there is an equal distance between each runway threshold which enables a CDA at 3.1% (1.8°) which is below the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west onto a downwind track parallel with the final approach and routes close to Ware at which point it turns left onto base leg and establishes aircraft on a 3,000ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>			
<p><b>DP S:</b> Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			
<p><b>DP P:</b> Any changes must be consistent with CAA’s Airspace Modernisation Strategy and the FASI-S programme,</p>	NOT MET	PARTIAL	MET

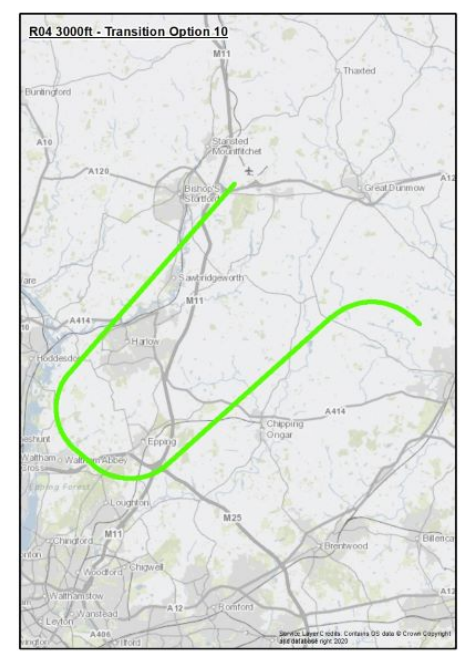
taking into account the needs of other change sponsors and airspace users.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is a potential interaction with Luton AD6. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 4. This option is deemed to take account of the needs of other airspace users.</p>			
DP <b>D</b> : The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
DP <b>C</b> : Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 will overfly some new areas.</p> <p>This option overflies more households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies fewer noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is longer than the 'do minimum' option.</p>			
DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and	NOT MET	PARTIAL	MET

facilitate continuous climb and descent to/from both ends of the runway.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 overflies 16502 existing households, which equates to an approximate population of 37800. This is more than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 17952 households and an approximate population of 41100.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 4 overflies a total of 65 noise sensitive receptors.</p> <p>This is fewer than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will take account of the Government's altitude-based priorities, which	NOT MET	PARTIAL	MET



emphasise minimising noise below 7,000 feet.			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 4 currently overflies a population of approximately 37800 people and 49 noise sensitive buildings.</p> <p>The estimated track length is 59km (32Nm).</p> <p>Option 4 overflies a total of 65 noise sensitive receptors and 1450 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 4 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 28.5 RW 04 - 3,000ft Transition Option 10

Design Principle Evaluation			
Option Name: RW 04 – 3,000ft Transition Option 10		REJECT	
<p><i>Option Description:</i></p> <p>Option 10 has an IAF at 7,000ft to the south-east of the airport which is equidistant to each runway threshold. It has been designed as an option that offers potential for noise relief if combined with Option 1.</p> <p>From this position there is an equal distance between each runway threshold which enables a CDA at 3.1% (1.8°) which is below the optimum for low noise approaches but within the acceptable range for CDAs defined within CAA and ICAO guidance.</p> <p>From the IAF the route turns south west onto a downwind track and routes further to the south than Option 1 to create noise dispersal. It then turns right onto base leg and establishes aircraft on a 3,000ft final approach.</p> <p>Whilst the nominal track is within the existing CAS, no assessment has been made at this stage to determine if it meets the CAA’s Containment Policy for the primary containment areas.</p>			
<p>DP <b>S</b>: Safety is our highest priority; our routes must be safe for airspace users and communities on the ground and must comply with national and international industry standards and regulations.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 has been designed by CAA Approved IFP designers in accordance with ICAO PANS-OPS requirements.</p> <p>Assessed in isolation, it is considered to be safe and designable.</p> <p>At this stage, it is not believed that additional protocols or mitigations are required to confirm safe operation, although an assessment against the other FASI-S airports will be required, at Stage 3, to confirm this.</p>			

<p>DP <b>P</b>: Any changes must be consistent with CAA's Airspace Modernisation Strategy and the FASI-S programme, taking into account the needs of other change sponsors and airspace users.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 is a PBN route and is deemed to be compliant with the UK's obligation for implementing PBN. Assessed in isolation, it is considered to deliver CDA/CCO operations. It starts at a point which is equidistant to each runway threshold.</p> <p>Based on current information, there is no known conflict with other FASI-S airports. Full assessment against the FASI-S Masterplan cannot be conducted at this stage.</p> <p>In isolation, it cannot be determined whether the scope to reduce the volume of controlled airspace is offered by Option 10. This option is deemed to take account of the needs of other airspace users.</p>			
<p>DP <b>D</b>: The airspace design must provide for the utilisation of aircraft movements permitted by planning permissions and within statutory limits in force at the airport.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>When assessed in isolation, this route can operate independently from the departure routes although further assessment will be required to determine the interactions with adjacent airports and links to the network. Assessment against new departure routes at STN will be considered at a later stage of the process. At this stage, this option is deemed to be capable of providing the required airport demand and does not require access to airspace belonging to adjacent airports. However, further assessments conducted at a later stage of the ACP process, will consider whether, as part of a combination of routes, this option continues to satisfy the Demand Design Principle.</p>			
<p>DP <b>C</b>: Where we choose routes that fly over new areas there will have to be a clear and objective benefit in doing so.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 will overfly some new areas.</p> <p>This option overflies fewer households and population than the 'do minimum' option.</p> <p>This option overflies some planned property development sites.</p> <p>This option overflies more noise sensitive receptors than the 'do minimum' option.</p> <p>Assessed in isolation, it supports CDO/CDA operations.</p> <p>The track to 7,000ft is shorter than the 'do minimum' option.</p>			

DP <b>T</b> : Routes should be designed to make use of the latest widely available aircraft navigation technology and facilitate continuous climb and descent to/from both ends of the runway.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route option is a PBN arrival route, is flyable and supports a continuous descent approach.</p>			
DP <b>N1</b> : In order to address the effects of aircraft noise, each route should seek to minimise the number of people overflown.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 overflies 6195 existing households, which equates to an approximate population of 15100. This is less than the 'do minimum' option.</p> <p>Taking account of proposed future development, this impact increases to approximately 6895 households and an approximate population of 16900.</p>			
DP <b>N2</b> : The use of multiple routes and/or other forms of respite, such as different time periods and balanced runway mode when operationally viable, will be considered.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This route could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'.</p>			
DP <b>N3</b> : Where practical, our route designs should avoid, or minimise effects upon, noise sensitive receptors. These may include designated sites and landscapes (such as SSSI and AONB), cultural or historic assets and sites providing care.	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>An initial quantitative assessment has identified that Option 10 overflies a total of 37 noise sensitive receptors.</p> <p>This is more than the 'do minimum' option.</p>			
DP <b>B</b> : Our designs will consider both noise and emissions and seek to strike the best balance. In so doing we will	NOT MET	PARTIAL	MET

<p>take account of the Government's altitude-based priorities, which emphasise minimising noise below 7,000 feet.</p>			
<p><i>Summary of Qualitative Assessment:</i></p> <p>Option 10 currently overflies a population of approximately 15100 people and 23 noise sensitive buildings.</p> <p>The estimated track length is 59km (32Nm).</p> <p>Option 10 overflies a total of 37 noise sensitive receptors and 700 proposed dwelling(s).</p>			
<p><b>DP E:</b> We will seek to minimise the amount of controlled airspace that we require, and our future route designs should ensure an efficient and systemised operation at Stansted, minimising interactions with other airports and maintaining priority access for Emergency Services.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>Although the containment areas have not yet been assessed, Option 10 is not expected to exceed the existing required volume of controlled airspace.</p> <p>Access for emergency services will be afforded the highest priority, as it currently is.</p>			
<p><b>DP A:</b> Where the adoption of modern navigation standards and/or flight profiles mean that some aircraft cannot fly the new routes, we will seek to minimise the environmental impacts from those aircraft.</p>	NOT MET	PARTIAL	MET
<p><i>Summary of Qualitative Assessment:</i></p> <p>This option could be used as part of a network that is consistent with this design principle and so we consider it a 'good fit'. Separate arrangements will be in place for aircraft not equipped to fly PBN approaches.</p>			

## 28.6 RW 04 - 3,000ft Transitions: Viable but Poor Fit

### 28.6.1 RWY 04 – 3,000ft Transition Option A3

IAF-3 is south and east of the aerodrome, equidistant to both runway thresholds but at a greater distance than other equidistant options. It facilitates a CDA but with a sub-optimum profile.

Reason for exclusion: Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns with regards to the safe separation between STN arrivals and interactions with traffic to and from other airports on routes M197 and Q295 and the network joining points for LTN, LCY and LHR departing traffic. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is efficiency and the and the expeditious flow of traffic including greater runway throughput. By creating interactions with routes traffic for other airports this option would not comply with this initiative (and therefore the Policy DP) as it has the potential to require ATC interaction which would reduce this efficiency.

### 28.6.2 RWY 04 – 3,000ft Transition Option B5

IAF-5 is the north west of the aerodrome (close to the northern position of the current LOREL hold). It was designed as a mirrored version of Option A3. It introduces more track miles and does facilitate a Continuous Descent but with a sub-optimum profile.

However, there is also the potential of interaction with AD6 routes operated by Luton Airport. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact. In addition the potential interaction with Luton is not aligned to the initiative for efficiency and an expeditious flow of traffic. This interaction would lead to ATC intervention and a potential reduction in network efficiency.

### 28.6.3 RWY 04 – 3,000ft Transition Option C6

IAF-6 east of the aerodrome and west of Colchester. The IAF lies outside of the 3,000ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy and Safety.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the CAA Airspace Containment Policy. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative

(and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **28.6.4 RWY 04 – 3,000ft Transition Option D7**

IAF-7 is north east of the aerodrome mid-way between Cambridge and Newmarket to the north east of STN. It was designed as a mirror for Option B6. The IAF lies outside of the 3,000ft design envelope, so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the CAA Airspace Containment Policy. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **28.6.5 RWY 04 – 3,000ft Transition Option E8**

IAF-8 is positioned south-east of the aerodrome between Chelmsford and Braintree. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **28.6.6 RWY 04 – 3,000ft Transition Option F9**

IAF-9 is positioned north of aerodrome to the south west of Duxford and north of STN. This was designed as a mirror of Option D8. This option introduces acceptable track miles and CDA for this runway but not for 04. There is also the potential of interaction with AD6 arrival routes operated by Luton Airport. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 28.6.7 RWY 04 – 3,000ft Transition Option G11

IAF-11 is north east of the aerodrome close to the current ABBOT hold. IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 28.6.8 RWY 04 – 3,000ft Transition Option H12

IAF-12 is positioned west of the aerodrome close to the current LOREL hold. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 28.6.9 RWY 04 – 3,000ft Transition Option I13

IAF 13 is positioned to the north west of the aerodrome close to BKY DVOR. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 28.6.10 RWY 04 – 3,000ft Transition Option J14

IAF 14 is positioned to the north of the aerodrome close to Saffron Walden. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.



#### 28.6.11 RWY 04 – 3,000ft Transition Option K15

IAF-15 is positioned to the north to the east of Duxford and to the north west of STN. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Safety and Policy.

**Safety:** The Safety DP requires design options to be safe in accordance with national and international industry standards and regulations. This option raised safety concerns through misalignment with the Minimum Stabilisation Distance (MSD) requirements within PANS-OPS. As a result this option would not comply with the Safety DP.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 28.6.12 RWY 04 – 3,000ft Transition Option L16

IAF 16 is positioned to the north west of the aerodrome north of BKY DVOR. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 28.6.13 RWY 04 – 3,000ft Transition Option M17

IAF 17 is positioned to the west of Duxford and north of the aerodrome. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### 28.6.14 RWY 04 – 3,000ft Transition Option N18

IAF 18 is positioned to the north of Royston at the northern boundary of the design envelope. The IAF is outside of the 3,000ft design area so CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

**Policy:** Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative

(and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **28.6.15 RWY 04 – 3,000ft Transition Option O19**

IAF-19 is positioned south-east of the aerodrome north of Chelmsford. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **28.6.16 RWY 04 – 3,000ft Transition Option P20**

IAF-20 is positioned south-east of the aerodrome north of Chelmsford. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **28.6.17 RWY 04 – 3,000ft Transition Option Q21**

IAF-21 south-east of the aerodrome east of Braintree. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

#### **28.6.18 RWY 04 – 3,000ft Transition Option R22**

IAF 22 is positioned to the south of Braintree. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

### 28.6.19 RWY 04 – 3,000ft Transition Option S23

IAF 23 positioned to the south east of the aerodrome and north east of Chelmsford. The IAF is outside of the 3,000ft design area so a CDA is achievable for runway 22, but not for 04.

Reason for exclusion: Policy.

Policy: Within the AMS, one of the initiatives that revised airspace must deliver is improved environmental performance. This option would not comply with this initiative (and therefore the Policy DP) as it would not provide a Continuous Descent Approach (CDA) to both runway direction directions, leading to increased fuel burn and noise impact.

## 29 Transitions Evaluation Summary

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Having applied the pre-constructed criteria detailed in section 4.3, it has been identified 30 Transitions design options will progress for further consideration.

No further design options were accepted through qualitative professional judgement.

The Accept/Reject process has identified 42 Transitions design options to be rejected as they did not qualify against the DPE assessment criteria.

## 30 Next Steps

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- Consistent with the requirements of Step 2A of CAP1616, we have undertaken a design process to identify a comprehensive list of design options. In Step 2A, these design options have been evaluated against the design principles that we identified through stakeholder engagement in Stage 1. This work is reported separately in the Design Options Report (DOR) and this Design Principles Evaluation (DPE). Those that best align with the design principles were carried forward in the process to Step 2B.
- Design options carried forward to Step 2B have been subject to an initial appraisal. The findings of that appraisal are set out in the IOA and the accompanying assessment tables.
- The IOA is the first of three appraisals required under CAP1616 and, subject to the approval of the CAA, we will now consider the shortlisted options identified in the IOA in greater detail as part of Stage 3. This further assessment will increasingly make use of quantitative data and will explore local factors in greater detail than the level of assessment has allowed to date. The next stages in our appraisal will be guided by the requirements set out in CAP1616, including the metrics set out in Appendix E.
- In setting out our shortlist of design options we have benefitted from extensive engagement with stakeholders and the general public. Among the stakeholders were other sponsors of airspace change. We can therefore be confident that our proposals are consistent with the emerging proposals from other change sponsors, in so far as they are known at this time. However, these separate but dependant airspace changes will continue to mature, and it will be important for us to understand how proposals from other airports within our LTMA cluster might interact with the proposals for STN and how collectively our developing design options are best integrated into the network at higher altitudes. We will continue to work with other change sponsors, including NATS, so that our decisions are informed by the best available information and consistent with the developing national masterplan. If required, we will review the work we have undertaken to date to reflect emerging information.
- The next logical step in considering airspace change is for individual design options to be combined into operating networks. This will support ongoing engagement and, in turn, will allow for a more detailed evaluation against the Design Principles N2, D and E. These consider noise respite, demand and efficiency respectively.
- In addition, as the shortlisted design options are combined into operating networks, it is likely that some of the design options will respond less well to the design principles. For example, they may prove to be incompatible with other design options, may conflict with the proposals from other change sponsors or may result in a higher cumulative impact. This may mean that certain design options will be discounted, because they are highly unlikely to perform as well as other options. As such, they would not be taken forward to the full options appraisal or public consultation at Stage 3. Consistent with the developing national masterplan, we recognise that *'trade-offs will be identified by ACP sponsors during the development of the initial and full options appraisals (Stages 2B and 3A of the CAP1616 process) and in collaboration with ACOG when assessing the combined and net impacts of interdependent options'*.

- Further refinement of design options whereby certain options are not to be appraised fully at Stage 3 will be fully explained in preparing for Stage 3. We will ensure that affected stakeholders are afforded the opportunity to provide feedback prior to the full options appraisal.

END OF REPORT