Stage 2 Rework
Additional Swathes

London Southend Airport FASI(S) ACP

ACP-2018-90

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Introduction

London Southend Airport is in the process of redesigning their arrival and departure routes as part of a nationwide programmme of airspace modernisation.

This is being done, along with 20 other airports and NATS, following the CAA's CAP 1616 process, as part of the Government's Airspace Modernisation programme.

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

Stage 1 – Design Principles

In September 2021 a document titled LSA FASI(S) ACP: '**An Introduction to Design Principles**' was issued to the stakeholders. This document contained an introduction to the ACP and our draft Design Principles.

Stakeholders were provided with a link to an online survey and 38 days to respond and contribute to the Design Principles.

A total of thirty-four responses were received through the online survey, and two additional responses via email. These responses helped us form the Design Principles we are using today; the process is detailed in a document titled '**Response on Design Principles'.**

Both documents and further information about this ACP and its progress to date can be found on the ACP Portal - Titled:

London Southend Airport, FASI- South, redesign of departure and arrival routes

Airspace change ID: ACP-2018-90

London Southend Airport passed the Stage 1 Define Gateway on the 31st March 2022.

Design Principles

Design Principle Number & Title	Description
1- Importance of Safety	The airspace design and its operation must maintain or, where possible, enhance current levels of safety.
2- Overflight	The new procedures should not increase the number of people overflown by aircraft using the Airport and, where possible ,options that provide a level of dispersion should also be considered.
3- Noise Footprint	The design should limit, and where practicable reduce, the impact of noise to stakeholders on the ground and, where possible, periods of built in respite should be considered.
4- Tranquillity	Where practical, route designs should limit effects upon sensitive areas. These may include cultural or historic assets, tranquil or rural areas, sites of care or education and AONB's.
5- Emissions and Air Quality	The proposed design should minimise CO2 emissions per flight.
6- Operational Requirements	The new procedures should address the needs of most operators at LSA.
7- Airspace Dimensions	The volume and classification of controlled airspace required for LSA should be the minimum necessary to deliver an efficient airspace design, considering the needs of all airspace users.
8- Airspace Complexity	The airspace design should seek to reduce complexity and bottlenecks in controlled and uncontrolled airspace and contribute to a reduction in airspace infringements.
9- Technical Requirements	The design shall be fully compliant with PANS-OPS and UK CAA criteria to meet the technical capability requirements of aircraft using the airport.
10- Systemisation	The arrival transitions and departure procedures shall be deconflicted and integrate with the en-route network, as per the FASI(S) programme, and, in the case of the arrival transitions, shall integrate with the Instrument Approach Procedures (IAPs) reducing the requirement for tactical coordination.
11- Operational Cost	Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.
12- AMS Realisation	This ACP must serve to further, and not conflict with, the realisation of the AMS.
13- PBN	The new procedures should capitalise on as many of the potential benefits of PBN implementation as are practicable.

Stage 2 – Options Development

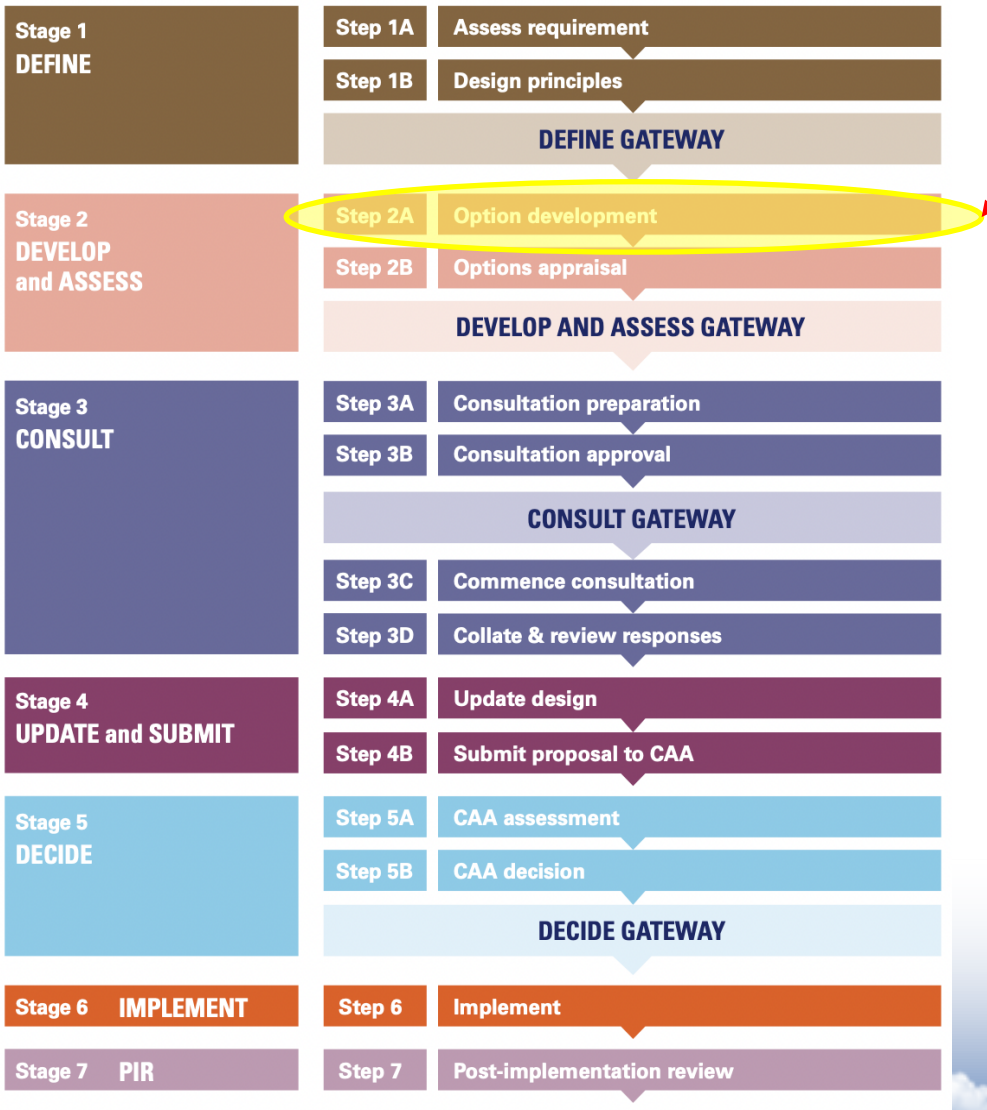
In December 2022 London Southend Airport submitted their Stage 2 documentation for the FASI(S) ACP. The ACP did not pass the gateway.

One of the issues highlighted was that there were two potential areas where swathes could have been designed but had not been included.

After an internal operational workshop we decided that, for completeness, it was best to introduce swathes in these areas to ensure we had captured all possible options.

This presentation introduces the two additional options.

CAP1616 Process



We are here

Why are we doing this?

It was brought to our attention that two sets of options were not as comprehensive as they could have been. Therefore, we are re-visiting these areas to improve upon our suite of options.

Both the additional swathes show potential routes through the Shoeburyness Danger Areas (DAs) – D136/D138.

It should be noted, we had already considered the potential of using this area for the other departure and arrival directions not included in this supplementary presentation. As a result, the airspace and land beneath these additional swathes has already been assessed through previously considered options.

The intention of this re-engagement is to provide information and gather feedback, from our stakeholders to ensure that our options at this stage are as comprehensive as possible.

We have included a Design Principle Evaluation(DPE) for the two additional options.

What we need from you

This presentation is being sent out to all stakeholders to introduce two additional options:

Departures - D23-NE-E*

Arrivals - A05-SE-H*

We will be holding an information session for discussion and feedback on these two additional options during September 2023.

Please find the link to book onto this session within the email.

Your help is needed at this stage of the targeted stakeholder engagement to ensure we are applying the final Design Principles in a manner consistent with your expectations.

We are asking for stakeholders to provide feedback on the two additional options only and specifically the 'Design Principle Evaluation'.

It is important to note, we are still early in the CAP 1616 process and this engagement is not a consultation on final routes, but an assessment of high-level concepts against the Design Principles you helped us develop.

London Southend Airport has a new Stage 2 gateway on 15th December 2023

Design Principle Evaluation (DPE)

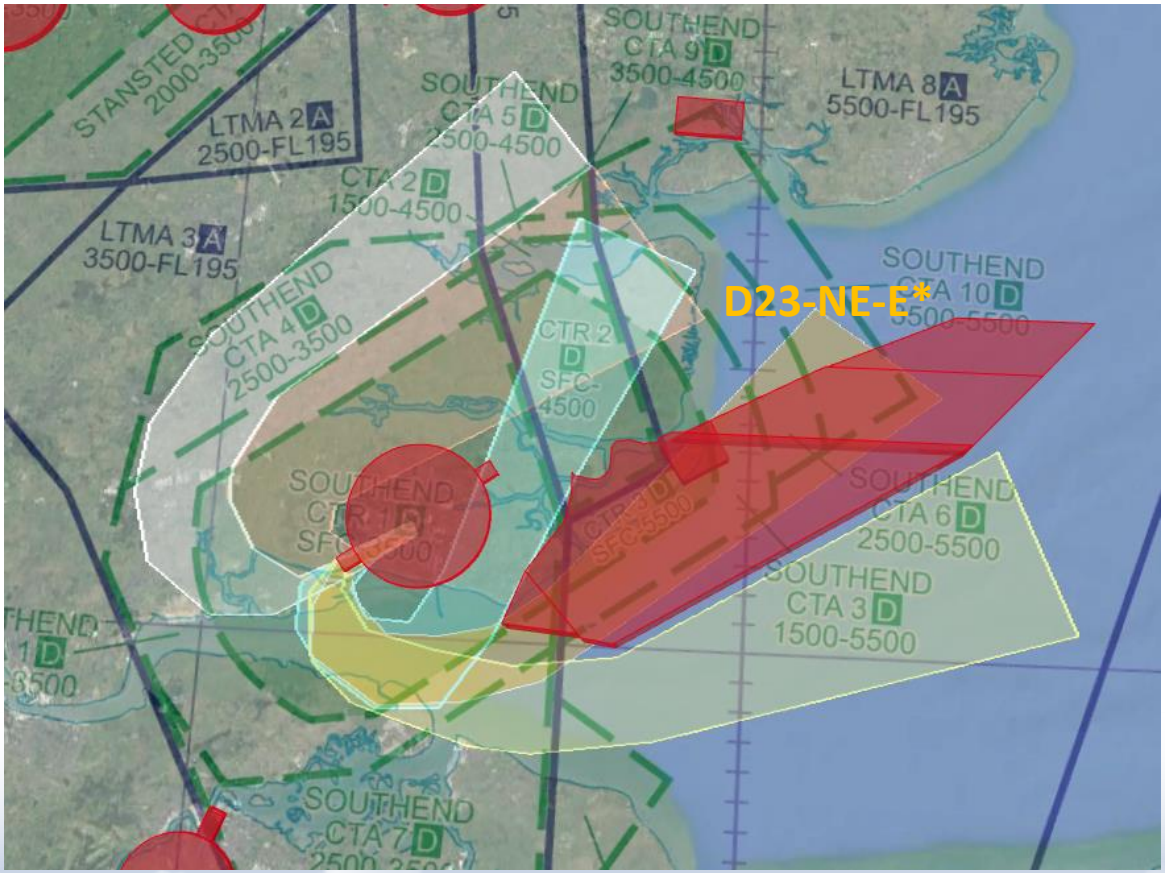
We have included a full Design Principle Evaluation for each of the additional options.

The full DPE for the options previously engaged upon can be found on the ACP Portal in a document titled 'Design principle evaluation - Version 1'.

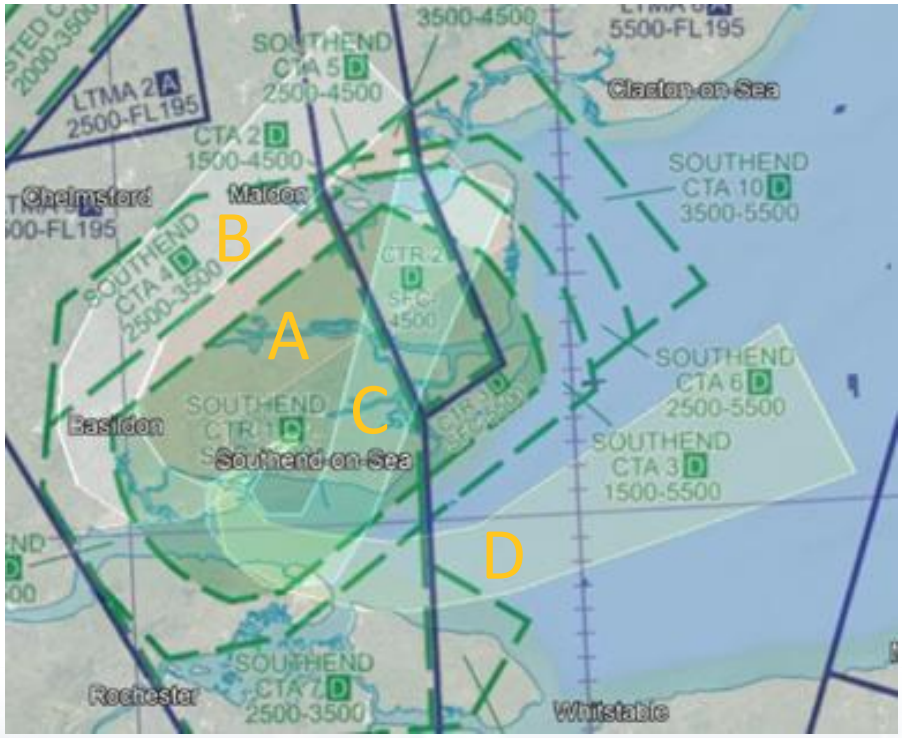
To conduct the DPE on the two additional options, we have used the 'Design Principle Evaluation Criteria' which is detailed in Annex A of the document titled 'Airspace change design options - Version 1' and can be found on the ACP Portal.

Departures
D23-NE-E*

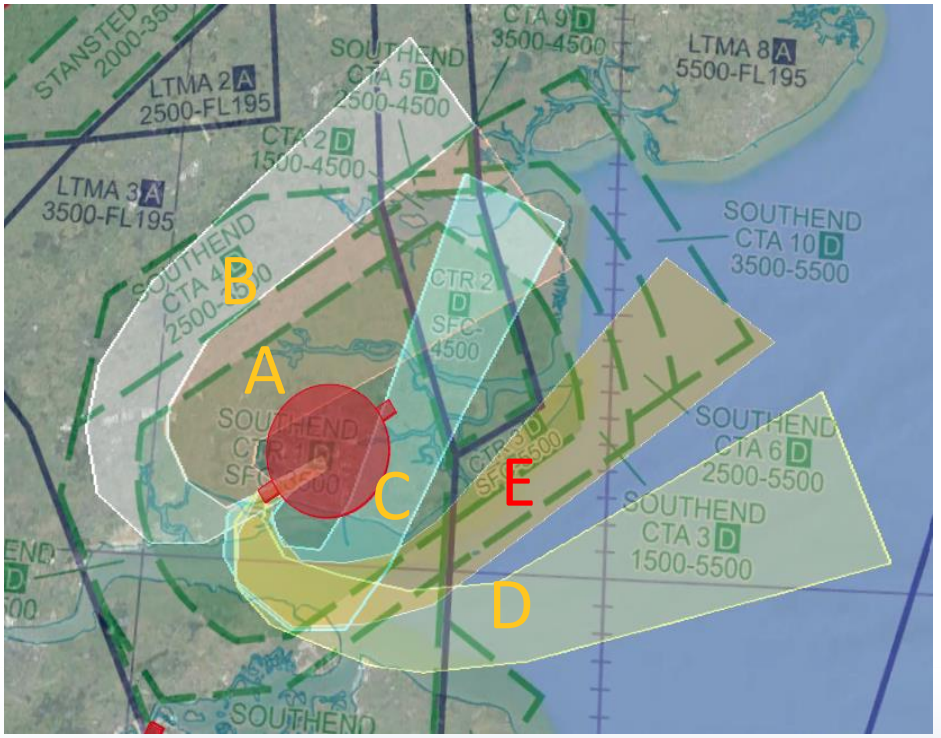
The additional option for Departures off Runway 23 to the North East is D23-NE-E.
This is shown on the map by the orange/brown swathe transiting the Danger Area.
The following 2 slides show the original options and this additional swathe.



Runway 23 – North East
Additional Option E

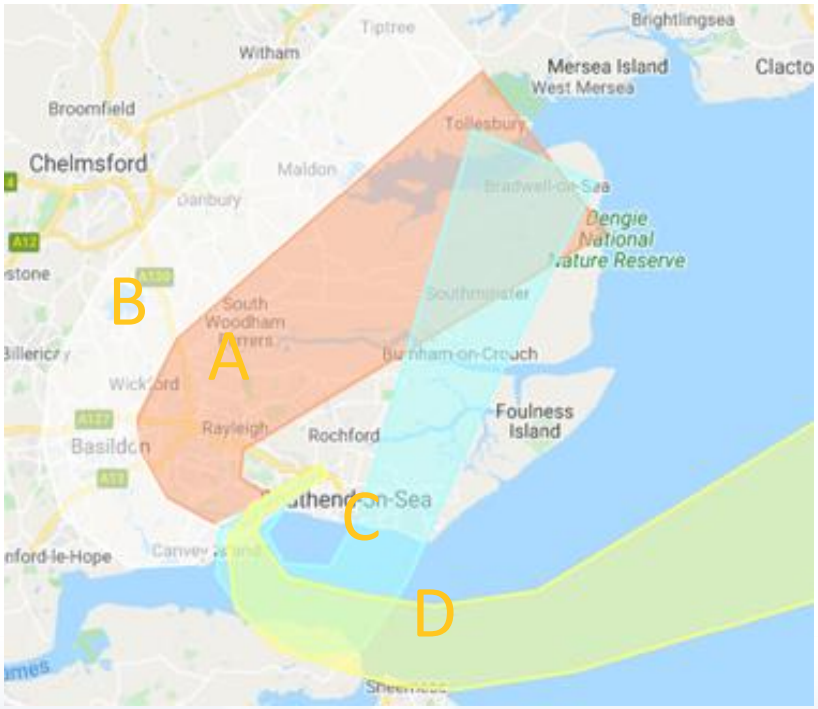


Existing Options

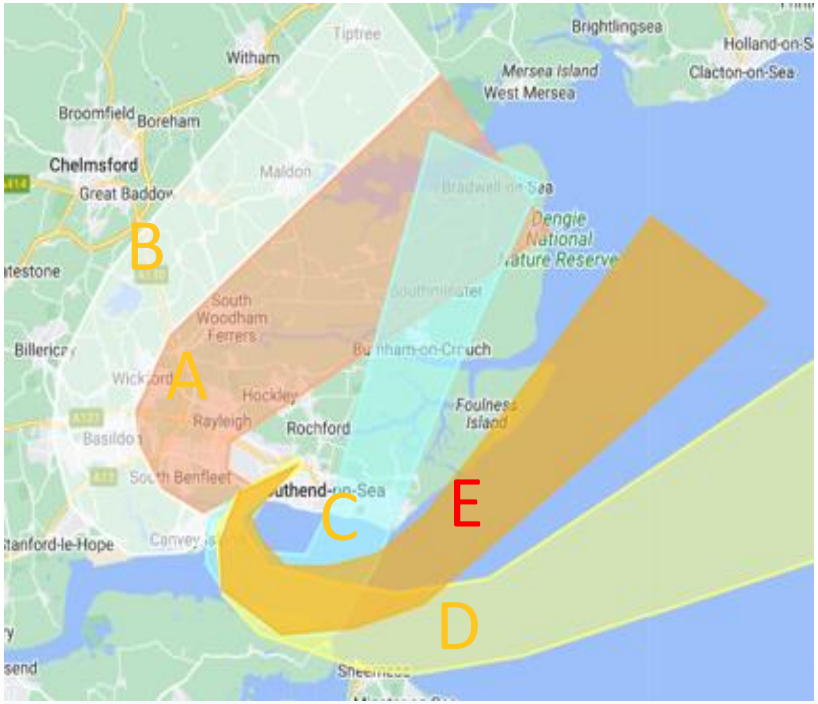


Additional Option E

Runway 23 – North East Additional Option E



Existing Options



Additional Option E

DPE - D23-NE-E

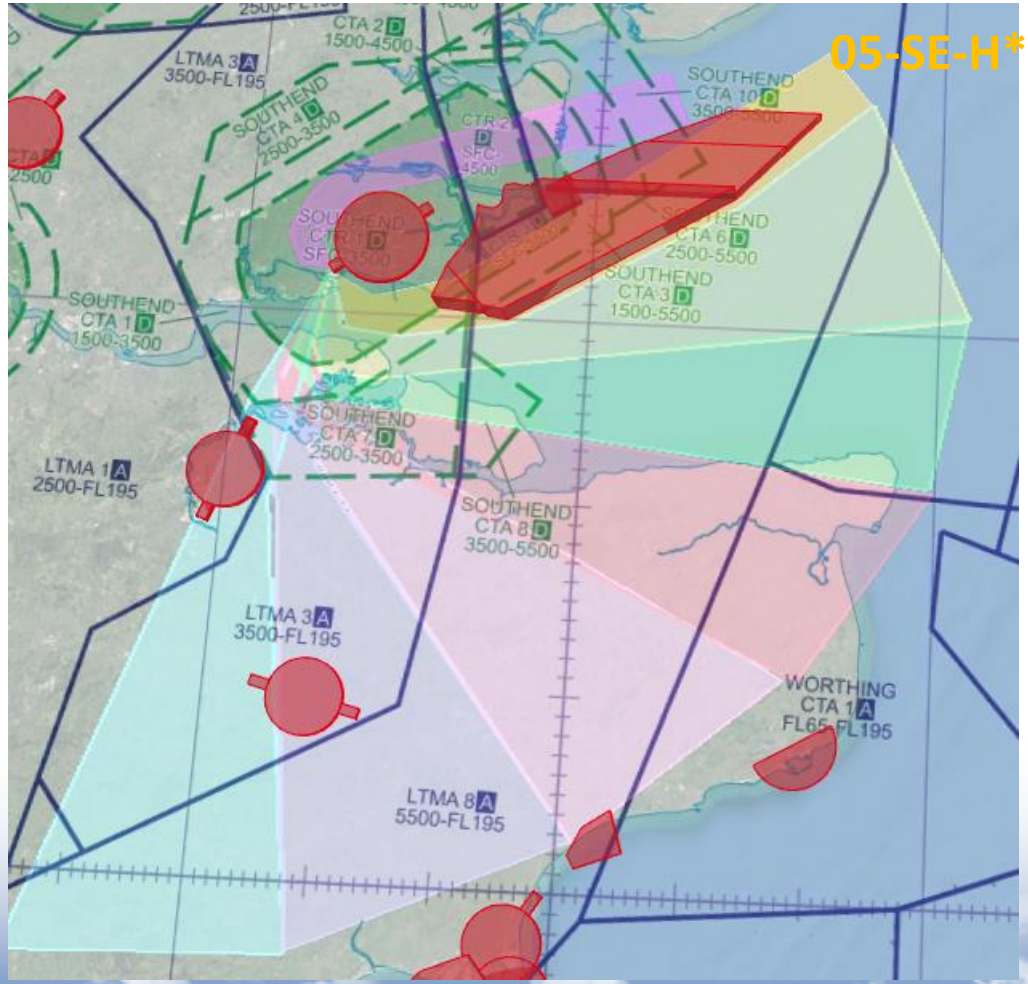
D23-NE-E	Design Principle	Qualitative Assessment	Outcome
1	**Importance of Safety –** The airspace design and its operation must maintain or, where possible, enhance current levels of safety.	Additional safety work would need to be done to make this a viable option. The entire swathe routes through the Shoeburyness Danger Areas (DA). This option could be used as a potential respite route for when the DA are inactive.	
2	**Overflight**-The new procedures should not increase the number of people overflown by aircraft using the Airport and, where possible, options that provide a level of dispersion should also be considered.	No foreseen increase in people overflown.	
3	**Noise Footprint** – The design should limit, and where practicable reduce, the impact of noise to stakeholders on the ground and, where possible, periods of built-in respite should be considered.	No foreseen increase in people overflown.	
4	**Tranquillity** - Where practical, route designs should limit effects upon sensitive areas. These may include cultural or historic assets, tranquil or rural areas, sites of care or education and AONB's.	Benfleet and Southend Marshes SPA, Thames Estuary & Marshes SPA, Outer Thames Estuary SPA and Medway Estuary SPA and Ramsar site, could all see an increase in disturbance.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Significant increase in track miles from today's operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	No issues foreseen.	
7	**Airspace Dimensions** – The volume and classification of controlled airspace required for LSA should be the minimum necessary to deliver an efficient airspace design, considering the needs of all airspace users.	This option would require an increase in controlled airspace.	
8	**Airspace Complexity** – The airspace design should seek to reduce complexity and bottlenecks in controlled and uncontrolled airspace and contribute to a reduction in airspace infringements.	Potential increase in complexity with arrivals due to this option crossing the final approach and interaction with the Shoeburyness Danger Areas (DA).	
9	**Technical Requirements** – The design shall be fully compliant with PANS-OPS and UK CAA criteria to meet the technical capability requirements of aircraft using the airport.	All the swathes have been assessed by a IFP Designer SME and have the potential to contain a fully compliant route. This will be investigated more closely once individual routes are assessed within the options carried forward to the next stage of the CAP1616 process.	
10	**Systemisation** – The arrival transitions and departure procedures shall be deconflicted and integrate with the en-route network, as per the FASI(S) programme, and in the case of the arrival transitions shall integrate with the Instrument Approach Procedures (IAPs) reducing the requirement for tactical coordination.	Potential conflict with the current London City point merge.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Significant extra track miles from today's operation.	
12	**AMS Realisation** – This ACP must serve to further, and not conflict with, the realisation of the AMS.	Assessed as fully met due to current high-level options. Furthermore, detailed analysis to be conducted at Stage 3 of the CAP1616 process.	
13	**PBN** – The new procedures should capitalise on as many of the potential benefits of PBN implementation as are practicable.	Assessed as fully met due to current high-level options. Furthermore, detailed analysis to be conducted at Stage 3 of the CAP1616 process.	

DPE Assessment for Departures of Runway 23 to the North East

Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11	DP12	DP13
D23-NE-A													
D23-NE-B													
D23-NE-C													
D23-NE-D													
D23-NE-E													

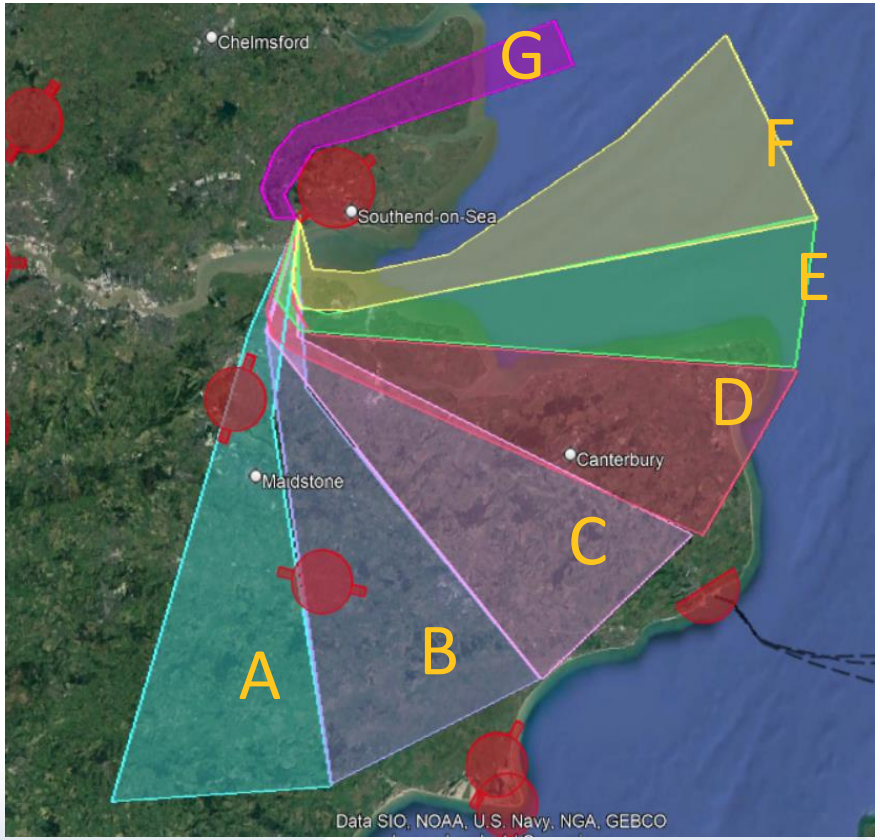
Arrivals
A05-SE-H*

The additional option for Arrivals to Runway 05 from the South East is A05-SE-H.
This is shown on the map by the orange/brown swathe transiting the DA.
The following 2 slides show the original options and this additional swathe.

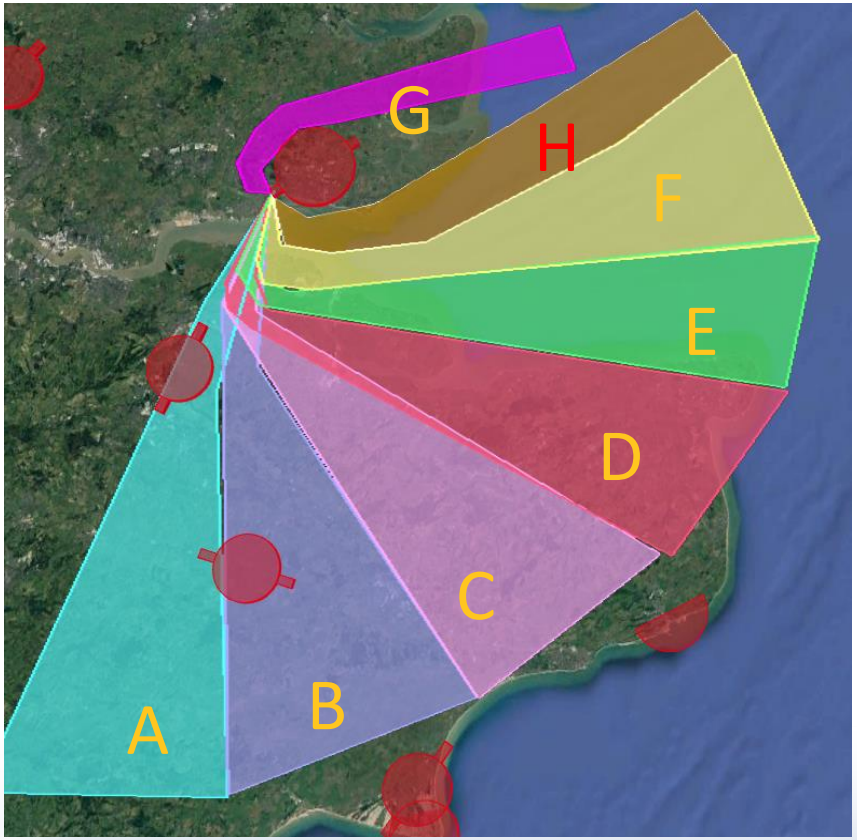


Runway 05 Arrivals from the South and East

Additional Option H

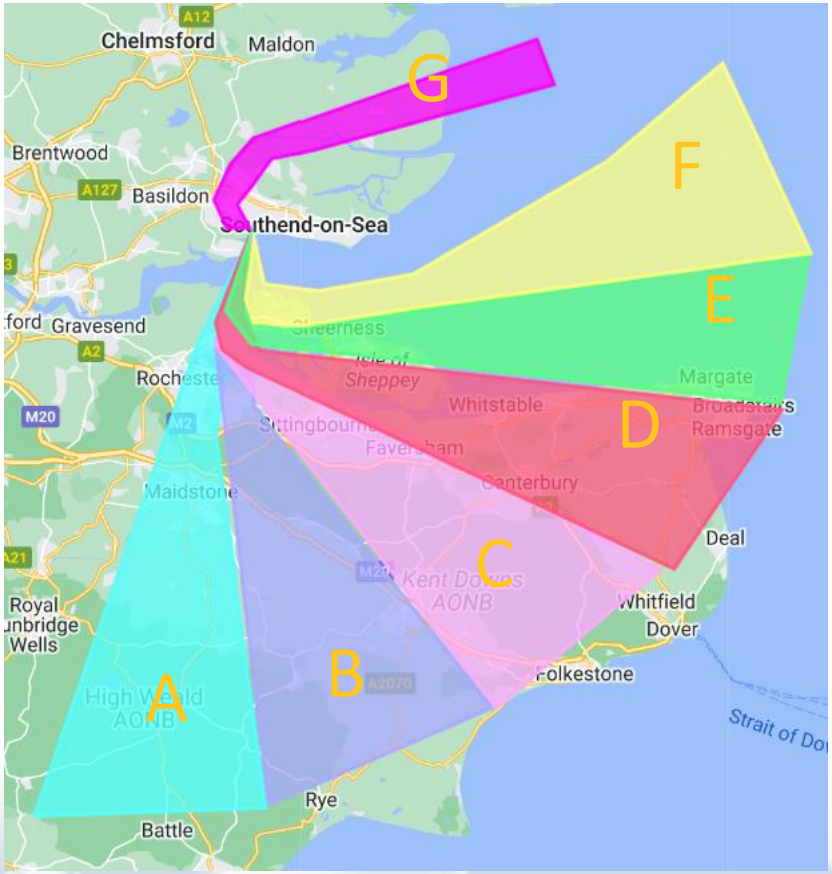


Existing Options

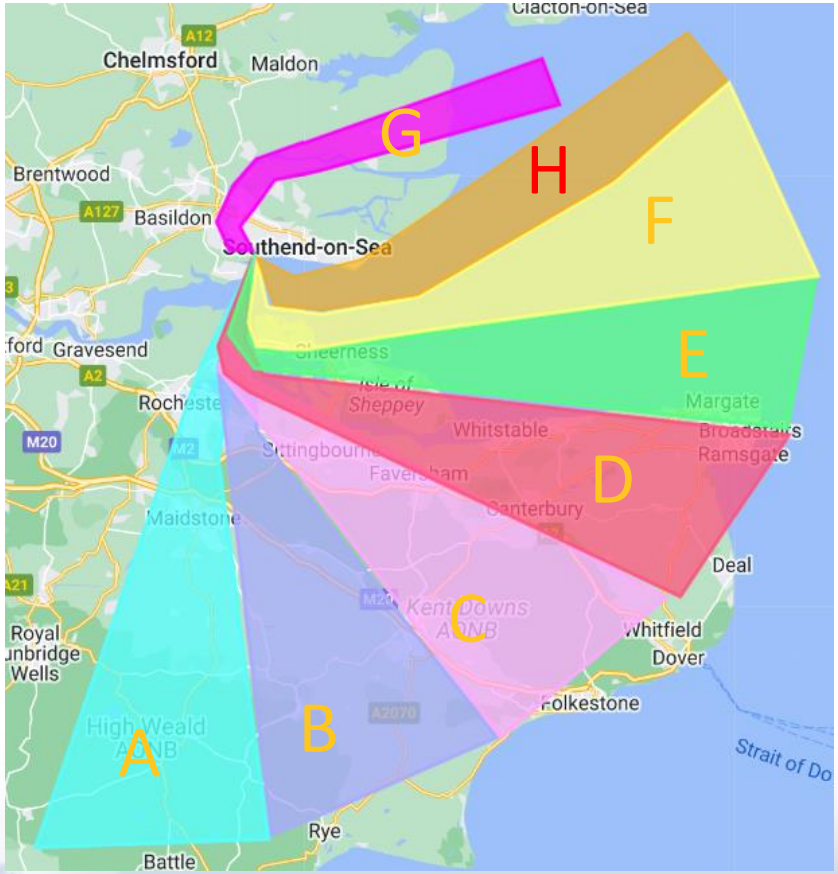


Additional Option H

Runway 05 Arrivals from the South and East
Additional Option H



Existing Options

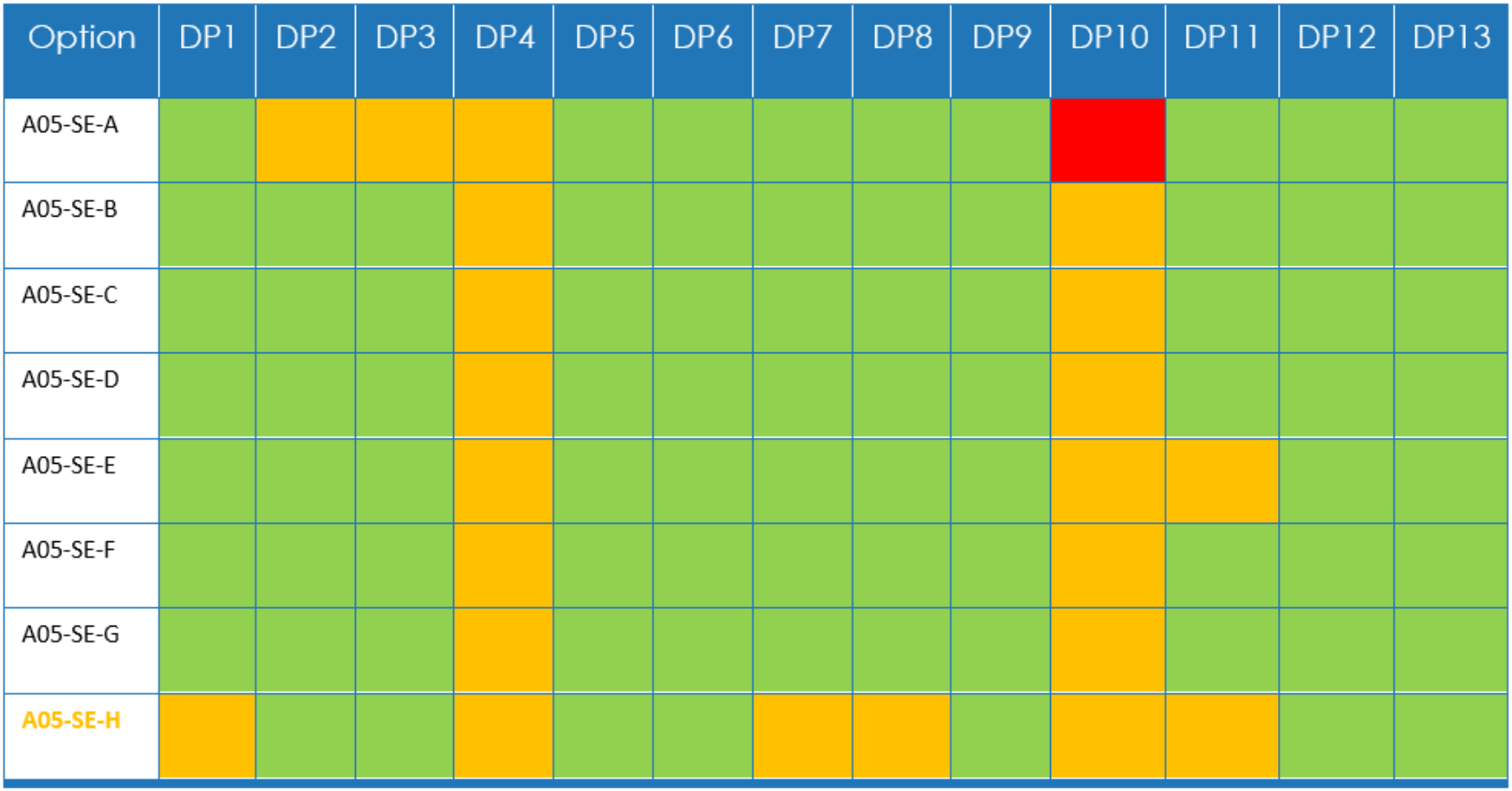


Additional Option H

DPE – A05-SE-H

A05-SE-H	Design Principle	Qualitative Assessment	Outcome
1	**Importance of Safety** – The airspace design and its operation must maintain or, where possible, enhance current levels of safety.	Additional safety work would need to be done to make this a viable option. The entire swathe routes through the Shoeburyness Danger Areas (DA). This option could be used as a potential respite route for when the DA are inactive.	
2	**Overflight**-The new procedures should not increase the number of people overflown by aircraft using the Airport and, where possible, options that provide a level of dispersion should also be considered.	No increase in people overflown from today's operation.	
3	**Noise Footprint** – The design should limit, and where practicable reduce, the impact of noise to stakeholders on the ground and where possible periods of built-in respite should be considered.	No increase in people overflown from today's operation.	
4	**Tranquillity** - Where practical, route designs should limit effects upon sensitive areas. These may include cultural or historic assets, tranquil or rural areas, sites of care or education and AONB's.	Benfleet and Southend Marshes SPA, Thames Estuary and Marshes SPA, Medway Estuary and Marshes SPA, The Swale SPA, Stodmarsh SPA, Thanet Coast & Sandwich Bay SPA; all fall within the confines of this swathe. Further work would need to be done to establish the impact should this option be carried forward.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Extra track miles if arriving from the South but no increase on today's baseline.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Not dissimilar to today's baseline operation.	
7	**Airspace Dimensions** – The volume and classification of controlled airspace required for LSA should be the minimum necessary to deliver an efficient airspace design, considering the needs of all airspace users.	This option would require an increase in controlled airspace.	
8	**Airspace Complexity** – The airspace design should seek to reduce complexity and bottlenecks in controlled and uncontrolled airspace and contribute to a reduction in airspace infringements.	Potential increase in complexity due to interaction with the Shoeburyness Danger Areas (DA).	
9	**Technical Requirements** – The design shall be fully compliant with PANS-OPS and UK CAA criteria to meet the technical capability requirements of aircraft using the airport.	All the swathes have been assessed by an IFP Designer SME and have the potential to contain a fully compliant route. This will be investigated more closely once individual routes are assessed within the options carried forward to the next stage of the CAP1616 process.	
10	**Systemisation** – The arrival transitions and departure procedures shall be deconflicted and integrate with the en-route network, as per the FASI(S) programme, and in the case of the arrival transitions shall integrate with the Instrument Approach Procedures (IAPs) reducing the requirement for tactical coordination.	Possible conflict with LSA departure swathes D05-S-C and D05-S-A.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Extra track miles if arriving from the South.	
12	**AMS Realisation** – This ACP must serve to further, and not conflict with, the realisation of the AMS.	Assessed as fully met due to current high-level options. Furthermore, detailed analysis to be conducted at Stage 3 of the CAP1616 process.	
13	**PBN** – The new procedures should capitalise on as many of the potential benefits of PBN implementation as are practicable.	Assessed as fully met due to current high-level options. Furthermore, detailed analysis to be conducted at Stage 3 of the CAP1616 process.	

DPE Assessment for Arrivals to Runway 05 from the South and East



Feedback

We are inviting you to comment on these two additional swathes and the associated DPE.

Please respond to the link in the email to provide your feedback and book your place at the feedback and information session for these two additional options.

Thank you for your time.