Airspace Change Proposal
Stage 2a

London Southend Airport Design Principle Evaluation - Annex

London Southend Airport FASI(S)

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Executive Summary

This document is the Annex to the report titled 'Stage 2A Options Development and Design Principle Evaluation', which can be found on the ACP Portal. It contains the Detailed Design Principle Evaluation for London Southend Airport's (LSA) Future Airspace Implementation, South, Airspace Change Proposal Stage 2 and associated stakeholder feedback.

A summarised version of this assessment is contained within the main document, with detailed descriptions of the methodology and process applied.

Abbreviations

ACP	Airspace Change Proposal
AONB	Area Outstanding Natural Beauty
ATC	Air Traffic Control
BKY	Barkway
BPK	Brookmans Park
CLN	Clacton
CPT	Compton
DA	Danger Area
DET	Detling
DP	Design Principle
FASI	Future Airspace Implementation South
IFP	Instrument Flight Procedure
LAM	Lambourne
LAMP	London Airspace Management Programme
LSA	London Southend Airport
LTMA	London Terminal Manoeuvring Area
NERL	National Air Traffic Services (En-route)
NTK	Noise and Track Keeping
RNAV	Area Navigation
RNP	Required Navigation Performance
RSPB	The Royal Society of the Protection of Birds

SPA	Special Protection Area
VOR	Very High Frequency Omni-Directional Range

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1. Introduction

1.1. Design Principle Assessment Document

This document forms the Annex to the report titled 'Stage 2A Options Development and Design Principle Evaluation', which can be found on the ACP Portal. It contains the Detailed Design Principle Evaluation for London Southend Airports FASI(S) Airspace Change Proposal (ACP) and associated stakeholder feedback.

A summarised version of this assessment is contained within the main document, with detailed descriptions of the methodology and process applied.

Survey Feedback

The survey textual feedback is presented in bullet points within 'x.x.3' of each section. The comments are copied in their entirety with responses in **BOLD**.

In addition to the comments in the document, we received one response in the survey from Biggin Hill Airport which addressed all the options we presented this it is copied below:

'This response applies to all departure and arrival routes. Biggin Hill Airport believe that it will be possible for all design principles to be applied to the routes which are established within each swathe. We look forward to further engagement, during the consultation, to explore and resolve any route options with possible interactions which will impact the Biggin Hill Airport route options development.' **LSA thanks Biggin Hill Airport for their feedback and looks forward to engaging with them throughout this ACP process.**

2. Departures Runway 05 - Northeast

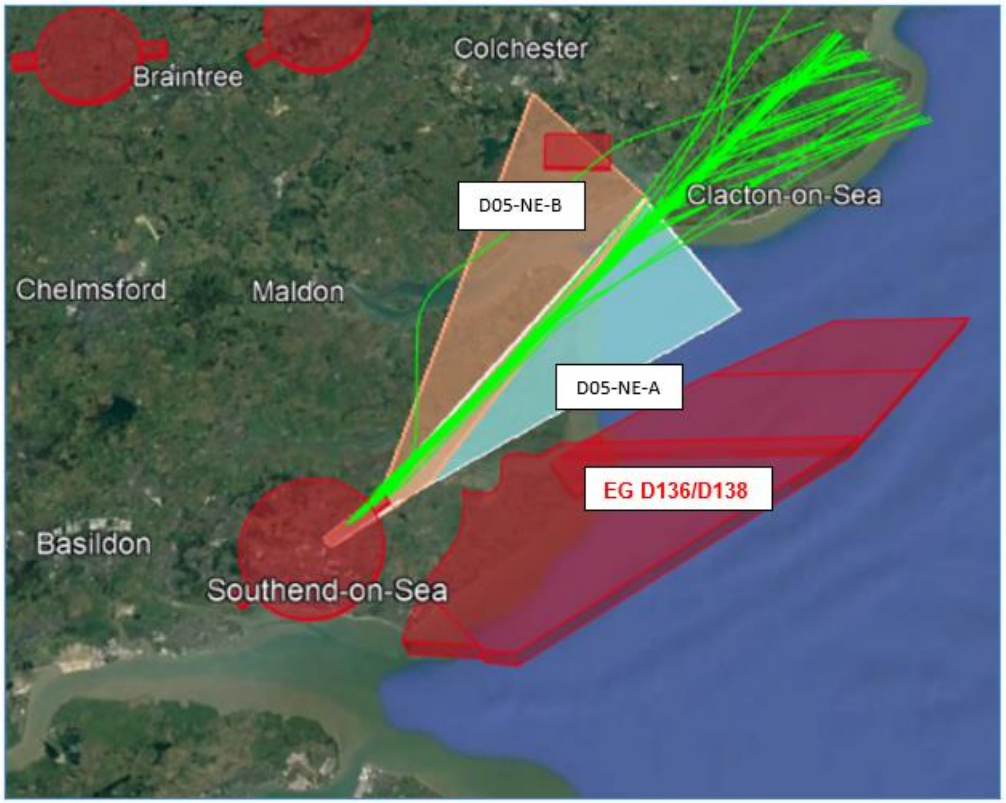

Figure 1: Departure Options Runway 05 - Northeast

2.1. Option **D05-NE-A**

Survey Question

'DEPARTURES Runway 05 - Northeast

Do you think we have correctly applied the Design Principles to swathe **D05-NE-A**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

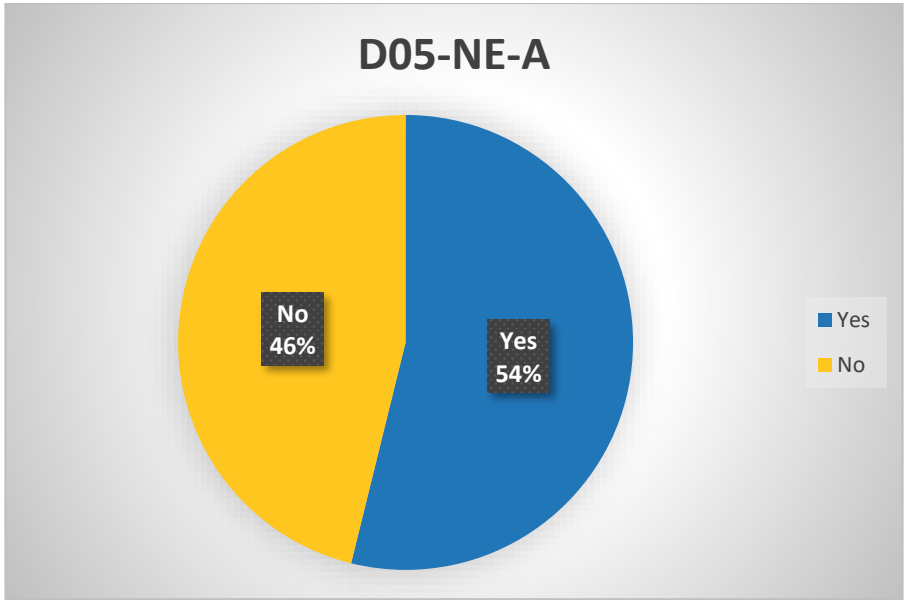

Figure 2: Option D05-NE-A Survey Response

Stakeholder feedback with our responses in **BOLD.**

'DP2/DP3 swathe appears to include Southminster so should be assessed same as D05-NE-B. Also appears to include Burnham-on-Crouch, which appears larger than Southminster.'

LSA agree and we have amended our assessment of DP2 and DP3.'No; Swathe A indicates that it would overfly the holiday park at Mersea Island, this is incorrectly captured in the table below.'

LSA agree and we have amended our assessment of DP2 and DP3.

'No; the departure DO5 NE-A Aircraft should be encouraged to have a maximum gradient of climb, utilising maximum performance, ensuring thrust reduction altitude is at 1500' and acceleration altitude is 3,000'or preferably 4,000 which will then ensure a minimum noise impact on Great Stambridge, aircraft are then to be kept mid-way between Ashingdon and Canewdon avoiding the major population areas of these villages, and being at the base of London airspace by the river Crouch, reducing the noise footprint at Burnham. How does the current proposal meet (Design principle 9, page 4 of the presentation). DP9. The current actual green lines take aircraft over the populated areas of the area which is unnecessary however with the reduction of VOR and increased RNP the requirement to route to CLN will be reduced allowing a more varied departure routing and aircraft to be higher when over local villages.'

This is welcome feedback from our stakeholder, however the detail given at this stage of the process is more in depth than the current assessment we are carrying out. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

'No, 3,4,5 – Flight path is over Crouch and Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC, Colne Estuary SPA and Ramsar, and Dengie SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants'

LSA agree and we have amended our assessment of DP4.

'No; Looking at runway 05 NE-A DP4 have 5 possible conflict areas, with a bit of tweaking and use of RNP (RNAV) positions the overflight of populated areas 2,3 and the bird sanctuary 5 could be completely avoided, certainly the aircraft could be a lot higher overpopulated areas if departure option 2 described above is stated in the text on the departure routes. Aircraft then don't have to follow the green tracks to CLN before turning. TUGPO TRIPO then enroute could be the solution. Overflight of the bird sanctuary at Wallasea could easily be at or above 6,000' if departure option 2 described above would be stated.'

This is welcome feedback from our Stakeholder, however the detail given at this stage of the process is more in depth than the current assessment we are carrying out. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D05-NE-A	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.	No initial safety concerns.	
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.	Depending on the placement of final routes, this option could see an increase in people overflown. The overflight of built-up areas - Southminster, Parkdean Holiday Park, Mersea Island, Burnham-on-Crouch, to name a few. This would be an increase from today's operation, which sees traffic route down the middle of D05-NE-A and D05-NE-B.	
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.	Depending on the placement of final routes, this option could see an increase in people overflown. The overflight of built-up areas - Southminster, Parkdean Holiday Park, Mersea Island, Burnham-on-Crouch, to name a few. This would be an increase from today's operation, which sees traffic route down the middle of D05-NE-A and D05-NE-B.	
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.	Overflight of Wallasea Island, Crouch & Roach Estuaries SPA, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC, Colne Estuary SPA and Dengie SPA. 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.	Minimal difference from today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Minimal difference from 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.	No new volume of controlled airspace would be required.	
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.	Minimal difference from today's baseline operation.	
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.	Possible conflict with LSA arrival swathe A05-SE-G.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Minimal difference from today's baseline 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.	

Table 1: Option D05-NE-A DP Assessment

2.2. Option **D05-NE-B**

Survey Question

'DEPARTURES Runway 05 - Northeast

Do you think we have correctly applied the Design Principles to swathe **D05-NE-B**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

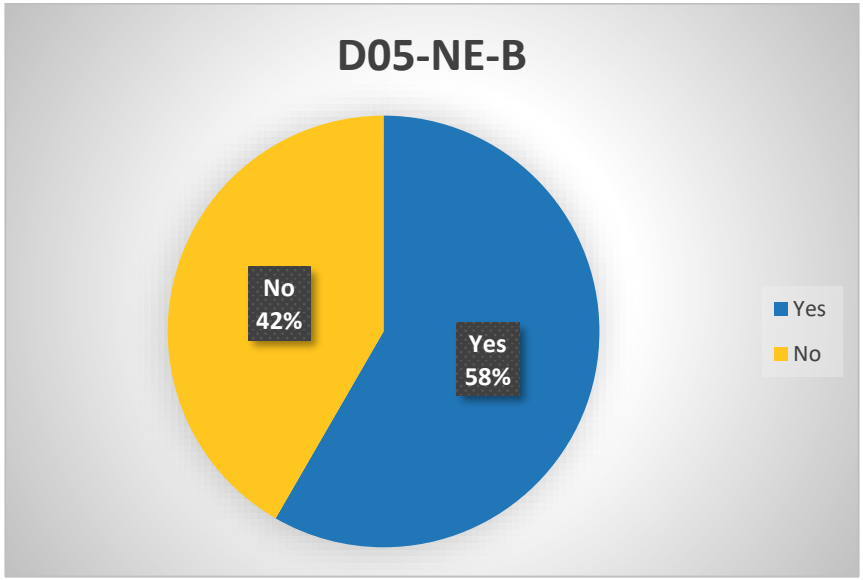

Figure 3: Option D05-NE-B Survey Response

Stakeholder feedback with our responses in **BOLD**.

'DP2/DP3 swathe includes Burnham-on-Crouch, which appears larger than Southminster, should be considered also.'

LSA agree and we have amended our assessment of DP2 and DP3.

'No; Swathe B indicates that it would not overfly the holiday park at Mersea Island, this is incorrectly captured in the table below'

LSA agree, and we have amended our assessment of DP2 and DP3.

'No; the departure DO5 NE-B Aircraft should be encouraged to have a maximum gradient of climb, utilising maximum performance, ensuring thrust reduction altitude is at 1500' and acceleration altitude is 3,000'or preferably 4,000 which will then ensure a minimum noise impact on the villages of Great Stambridge Paglesham ,improving the importance of safety by ensuring aircraft are significantly above the major hazard of the increased number of birds around the RSPB Wallesea Island area. Not below 4000 on reaching the river crouch or increase the base of the Southend Class D airspace to allow reduction of the noise footprint at Burnham. How does the current proposal meet DP9. The current actual green lines take aircraft over the populated areas of the area, which is unnecessary, however with the reduction of VOR and increased RNP the requirement to route to CLN will be reduced allowing a more varied departure routing and aircraft to be higher when over local villages.'

This is welcome feedback from our stakeholder, however the detail given at this stage of the process is more in depth than the current assessment we are carrying out. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

'No; 3,4,5 – Flight path is over Crouch and Roach Estuaries SPA and Ramsar site, Essex Estuaries SAC, Colne Estuary SPA and Ramsar, and Dengie SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants'

LSA agree and we have amended our assessment of DP4.

'No; Departure D05 NE B DP2 2 areas DP3 3 areas and DP10 possible conflict 4, this option would be a less noise sensitive option if aircraft were allowed to climb and the use of RNP positions away from built up areas which in modern aircraft technology is easy and these areas could be avoided, and acceleration of aircraft was restricted to above 3500' and stated in the departure text'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D05-NE-B	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.	No initial safety concerns.	
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.	Depending on the placement of final routes, this option could see a reduction in people overflown. Overflight of built-up areas – Southminster and Burnham-on-Crouch.	
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.	Depending on the placement of final routes and this option could see a reduction in people overflown. Overflight of built-up areas – Southminster and Burnham-on-Crouch.	
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.	Overflight of Wallasea Island, Crouch & Roach Estuaries SPA and Ramsar site, Essex Estuaries SAC, Colne Estuary SPA and Ramsar and Dengie SPA and Ramsar, which could have impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Minimal difference from today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Minimal difference from 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.	No new volume of controlled airspace would be required.	
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.	Minimal difference from today's baseline operation.	
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 LSA arrival swathe with A05-SE-G.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Minimal difference from today's baseline 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.	

Table 2: Option D05-NE-B DP Assessment

3. Departures Runway 05 – Northwest

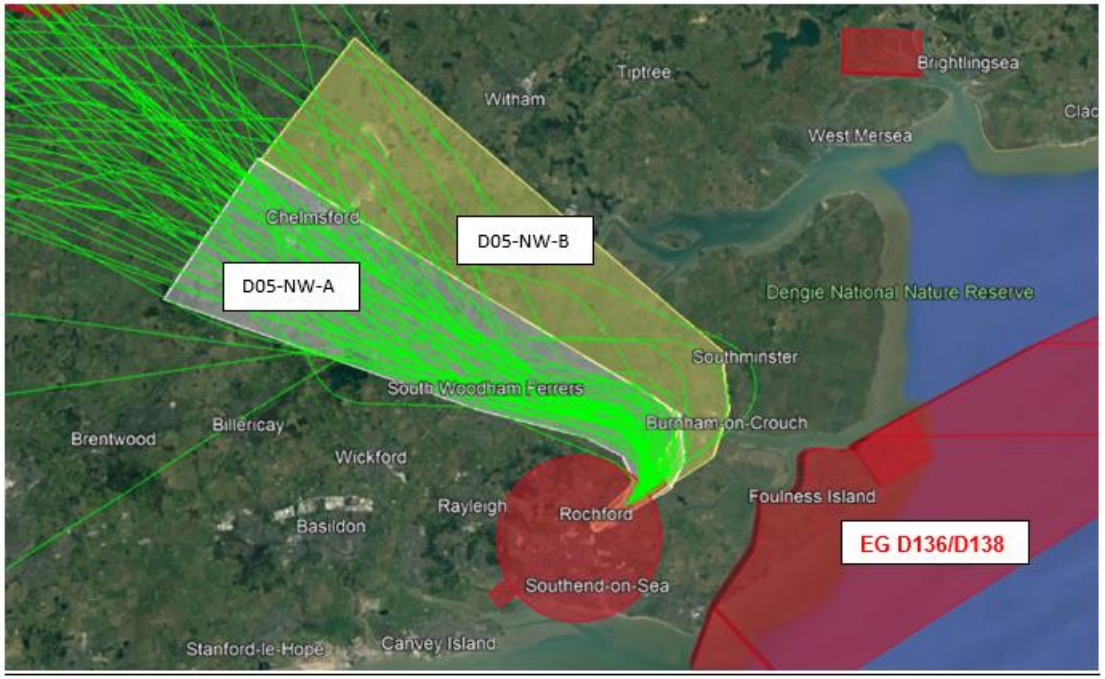

Figure 4: Departure Options Runway 05 - Northwest

3.1. Option **D05-NW-A**

Survey Question

'DEPARTURES Runway 05 - Northwest

Do you think we have correctly applied the Design Principles to swathe **D05-NW-A**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

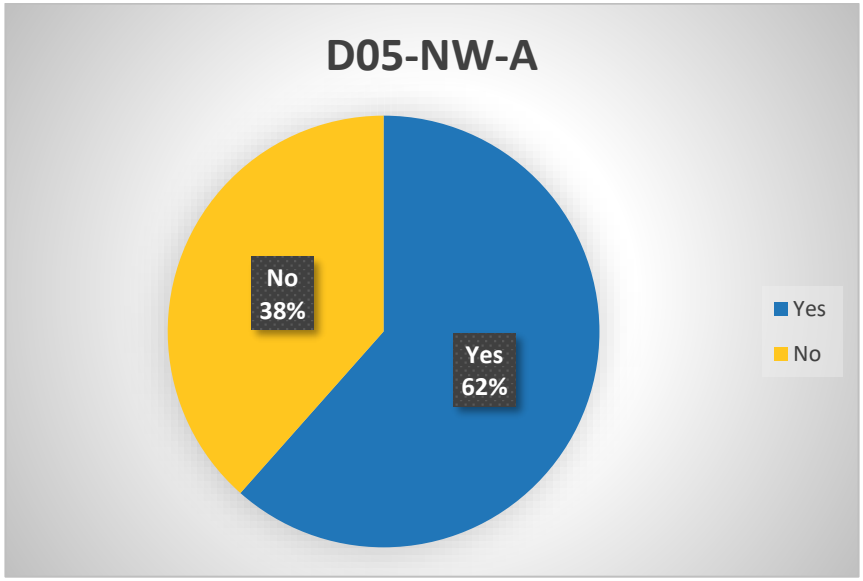

Figure 5: Option D05-NW-A Survey Response

Stakeholder feedback with our responses in **BOLD.**

'No; DO5 NWA Aircraft should be encouraged to have a maximum gradient of climb, utilising maximum performance, ensuring thrust reduction altitude is at 1500' and acceleration altitude is 3,000'or preferably 4,000 and allowed unrestricted climb to be above 5,000' by the river crouch, avoiding all built up areas, by at 400' turning to follow the river roach until clear of Great Stambridge then turning North until above 5000' and east abeam canewdon

before turning northwest. How does the current proposal meet DP9. The current actual green lines take aircraft over the populated areas of the area which is unnecessary however with the reduction of VOR and increased RNP the requirement to route to LAM or BPK will be reduced allowing a more varied departure routing and aircraft to be higher when over local villages.'

This is welcome feedback from our stakeholder, however the detail given at this stage of the process is more in depth than the current assessment we are carrying out. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

'No; DP10 - Systemisation. Conflict with both current and future London Stansted (STN) departures to the East and South. Level restrictions or Air Traffic Control (ATC) intervention will be required to ensure separation. Potential conflict with future STN Arrivals depending on position and type of the agreed holding facility with NERL. DP 12 – AMS Realisation – STN note the highlighted constraint as Shoeburyness Range, however we would expect the location and potential operations of other airports to be noted as either a constraint or a material consideration to align with the AMS. In both cases STN would like to gain an understanding of the altitude to which the swathes extend to and work with SEN to resolve interactions.'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Crouch & Roach Estuaries SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

'D05 NW A is right overhead one of the most densely populated areas around the airport and if projected house building is turned into houses being built will lead to more noise complaints, also with the removal of the VOR LAM, BPK, BKY, CPT in the relative near future this will allow aircraft to be more efficient and produce less CO2 on departure. NWA is less preferred than NWB and NWB could be made more efficient by the use of RNP positions away from Ashingdon, Hockley etc.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D05-NW-A	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.	No initial safety concerns.	
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.	Current departures to the Northwest route within this swathe, however there are future house building projects in this area which could lead to an increase in people overflown and noise.	
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.	Current departures to the Northwest route within this swathe, however there are future house building projects in this area which could lead to an increase in people overflown and noise.	
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.	Crouch Estuary SPA overflown.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Minimal difference from today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Minimal difference from 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.	No new volume of controlled airspace would be required.	
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.	Minimal difference from today's baseline operation.	
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 arrival swathes A05-NW-C & A05-NW-B. Conflict with both current and future London Stansted departures to the East & South. Preference from London Stansted so keep as amber. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Minimal difference from today's baseline 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.	

Table 3: Option D05-NW-A DP Assessment

3.2. Option **D05-NW-B**

Survey Question

'DEPARTURES Runway 05 - Northwest

Do you think we have correctly applied the Design Principles to swathe **D05-NW-B**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

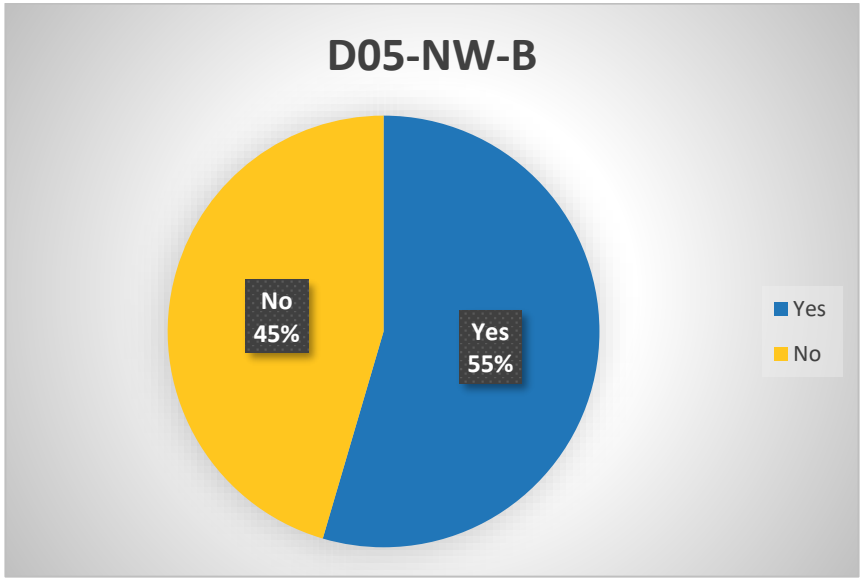

Figure 6: Option D05-NW-B Survey Response

Stakeholder feedback with our responses in **BOLD.**

'DP2/DP3 Amber for different communities possibly affected; appears inconsistent with evaluation of D05-NE-A which is green even though no/very few tracks currently overfly this area.'

LSA agree and we have amended our assessment of DP2 and DP3.

'No; Aircraft should be encouraged to have a maximum gradient of climb, utilising maximum performance, ensuring thrust reduction altitude is at 1500' and acceleration altitude is 3,000'or preferably 4,000 which will then ensure a minimum noise impact on the villages of Great Stambridge Paglesham, improving the importance of safety by ensuring aircraft are significantly above the major hazard of the increased number of birds around the RSPB Wallesea Island area. Routing to SABRE or south of SABRE but being above 4000' on reaching the river crouch or increase the base of the Southend Class D airspace to allow reduction of the noise footprint at Burnham. How does the current proposal meet DP9. The current actual green lines take aircraft over the populated areas of the area which is unnecessary however with the reduction of VOR and increased RNP the requirement to route to LAM or BPK will be reduced allowing a more varied departure routing and aircraft to be higher when over local village'

This feedback is welcome from our stakeholder, however the detail given at this stage of the process is more in depth than the current assessment we are carrying out. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

'No; DP10 - Systemisation. Conflict with both current and future STN departures to the East and South. Level restrictions or ATC intervention will be required to ensure separation. Potential conflict with future STN Arrivals depending on position and type of the agreed holding facility with NERL. DP 12 – AMS Realisation - STN note the highlighted constraint as Shoeburyness Range, however we would expect the location and potential operations of other airports to be noted as either a constraint or a material consideration to align with the AMS. In both cases STN would like to gain an understanding of the altitude to which the swathes extend to and work with SEN to resolve interactions.'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Crouch & Roach Estuaries SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

'NWB is a better option to NWA especially if aircraft are allowed to climb unrestricted to Flight levels. Which involves coordination with London ATC, with the introduction of LAMP this should be possible.'

This is included in our assessment and reflected in the assessment of the Systemisation DP10.

Full Design Principle Assessment

D05-NW-B	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.	No initial safety concerns.	
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.	Potential increase in overflight of built-up areas - Burnham-on-Crouch, for example.	
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.	Potential increase in overflight of built-up areas - Burnham-on-Crouch, for example.	
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.	Crouch & Roach Estuaries SPA and Ramsar site could be overflown at low level.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Minimal difference from today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Minimal difference from 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.	No new volume of controlled airspace would be required.	
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.	Minimal difference from today's baseline operation.	
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.	Potential conflict with LSA arrival swathes A05-NW-C & A05-NW-B. Conflict with both current and future London Stansted departures to the East & South. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Minimal difference from today's baseline 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.	

Table 4: Option D05-NW-B DP Assessment

4. Departures Runway 05 – South/ Southeast

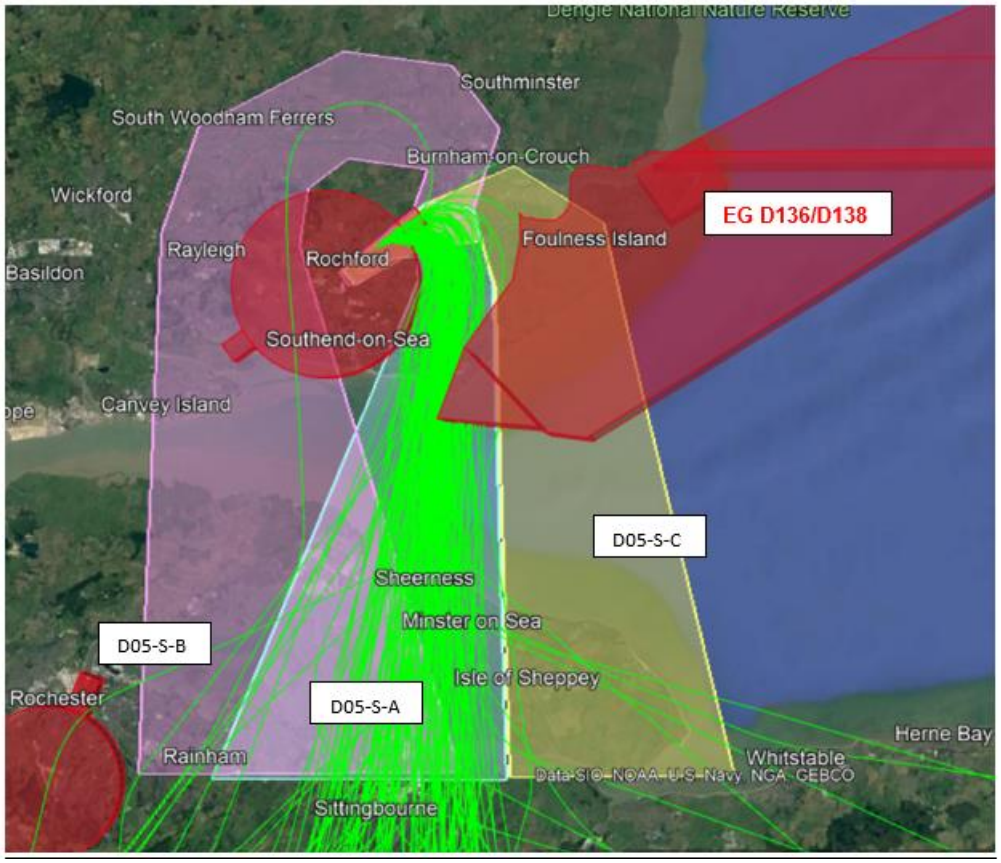

Figure 7: Departure Options Runway 05 - South/ Southeast

4.1. Option **D05-S-A**

Survey Question

'DEPARTURES Runway 05 – South/ Southeast

Do you think we have correctly applied the Design Principles to swathe **D05-S-A**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

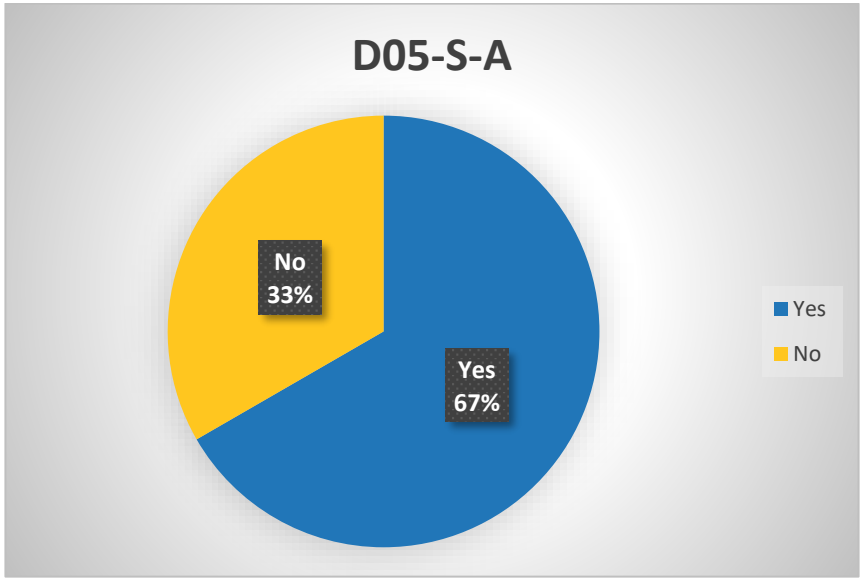

Figure 8: Option D05-S-A Survey Response

Stakeholder feedback with our responses in **BOLD**.

'No; DP1 & DP6: Swathe A partially overlapping DA, would be limited availability;'

LSA agree, and we have amended our assessment of DP1 and DP6.

'No; departures runway 05 South/ Southeast D05-S-A DP 2 Over flight DP 3 Noise DP 4 Tranquillity: No use of the DA has been made on the departures, as can be seen from the green lines on page 20. This leads to noise complaints from the residents of Shoeburyness, Barling, Little Wakering and Great Wakering. When the DA is not open aircraft should be routed through the DA, on departure Passing 400' turn right follow the river Roach until past potton creek then right turn TANET then on course DVR. When the DA is active allowance should be made for the aircraft to depart through the DA, the aircraft depart on a schedule, liaison between Air Traffic and the DA management shouldn't be difficult to co-ordinate the movements. Route aircraft further East and higher to avoid the towns.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

'No; 3,4,5 – Flight path is over Crouch and Roach Estuaries SPA and Ramsar site, Benfleet, and Southend Marshes SPA and Ramsar site, and Thames Estuary & Marshes SPA and Ramsar site and Medway Estuary SPA and Ramsar site, the Swale SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB may also be impacted.'

LSA agree and we have amended our assessment of DP4.

'05 S B used to be the only departure procedure for runway 05, which was replaced by 05 S A few years ago with aircraft departing 05 and flying over the villages of Stonebridge, Little and Great Wakering Barling Shoeburyness in the climb but restricted on altitude by London ATC both S A and S B should be replaced by S C avoids flying over the population and wildlife areas therefore making the departures safer, but would involve coordination with the military DA authorities, as there will be scheduled services using this route pre planning of their activities wouldn't be an issue avoiding the departure times of aircraft.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D05-S-A	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.	Due to the tight turn to the right on departure there is potential for penetration of the Shoeburyness Danger Areas (DA). Work would need to be done to ensure the PBN protected area remains clear of the DA. Alternatively use of a route inside this swathe would only be available when the DA are not active.	
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.	Low level overflight of Shoeburyness and Thorpe Bay. Traffic currently routes this way so no more impact than Baseline (Do Nothing) option.	
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.	Impact to suburbs of Little Wakering, Great Wakering, Thorpe Bay and Shoeburyness, no different than 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.	Low level overflight of Barling Magna Wildlife Reserve and Roach River Estuary SPA. Overflight of Thames Estuary & Marshes SPA.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	This is the swathe with the shortest route so CO2 emissions will be kept to a minimum	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	This route is currently only used when the Shoeburyness DA as are inactive due to the necessity for a very tight turn to avoid. We have assessed this DP as being partially met due to the implications on certain operators and aircraft type that may be unable to remain clear of the DA should this option be carried forward for a permanent route.	
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.	Used in the current operation so no additional airspace would be required.	
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.	A right turn on departure would help to keep the traffic free of conflict.	
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 conflictions with LSA arrival swathes A05-SE-F and A05-SE-E. Possible confliction with London City Airport's procedures, this will be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	This is the swathe with the shortest route so fuel costs will be kept to a minimum.	
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.	

Table 5: Option D05-S-A DP Assessment

4.2. Option **D05-S-B**

Survey Question

'DEPARTURES Runway 05 – South/ Southeast

Do you think we have correctly applied the Design Principles to swathe **D05-S-B**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

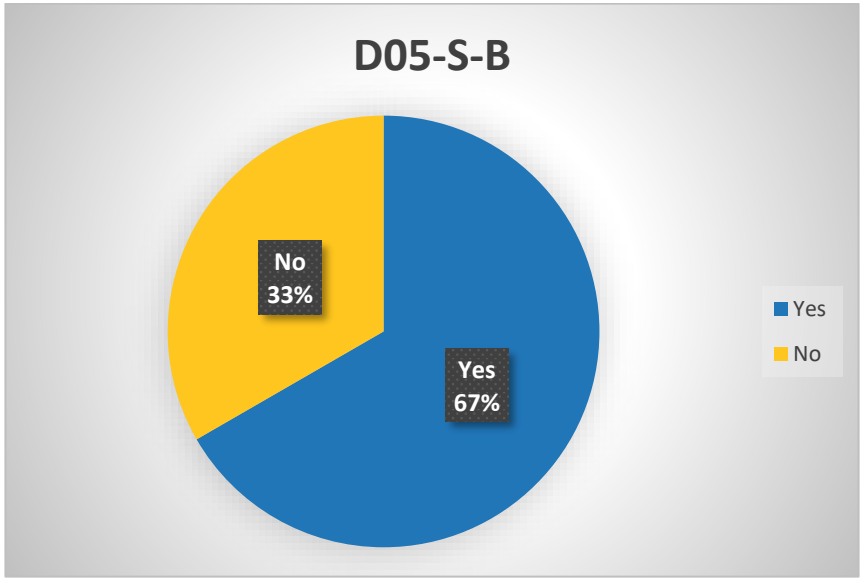

Figure 9: Option D05-S-B Survey Response

Stakeholder feedback with our responses in **BOLD.**

'Not completely clear why B gets a red on DP11 though I think that probably a greater swing round and back-maybe worth explaining more'.

LSA agree and we have amended our assessment of DP11.

'No; Departures runway 05 South /Southeast D05 B DP 2 Over flight DP 3 Noise DP 4 Tranquillity Route aircraft to the north of all villages before they turn south towards DET ensuring they route to the east of Ashingdon to the South of Fambridge at or above 4,000' towards Rawreth above 5,000' and between North Benfleet and Bowers Gifford above 6,000''.

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

'No; 3,4,5 – Flight path is over Crouch and Roach Estuaries SPA and Ramsar site, Benfleet, and Southend Marshes SPA and Ramsar site, Foulness SPA and Ramsar and Thames Estuary & Marshes SPA and Ramsar, Outer Thames Estuary SPA and Medway Estuary SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB may also be impacted'

LSA agree, and we have amended our assessment of DP4.

'05 S B used to be the only departure procedure for runway 05, which was replaced by 05 S A few years ago with aircraft departing 05 and flying over the villages of Stonebridge, Little and Great Wakering Barling Shoeburyness in the climb but restricted on altitude by London ATC both S A and S B should be replaced by S C avoids flying over the population and wildlife areas therefore making the departures safer, but would involve coordination with the military DA authorities, as there will be scheduled services using this route pre planning of their activities wouldn't be an issue avoiding the departure times of aircraft.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D05-S-B	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.	No safety concerns at this stage	
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.	Burnham-on Crouch and Creeksea potentially overflown at low level. Aircraft should have sufficient height to not cause too much concern by the time they overfly Rayleigh, Hockley and Hadleigh. These are new areas not previously overflown, so the decision has been made to grade this as 'partially met'.	
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.	Burnham-on Crouch and Creeksea potentially overflown at low level. Aircraft should have sufficient height to not cause too much concern by the time they overfly Rayleigh, Hockley and Hadleigh. These are new areas not previously overflown, so the decision has been made to grade this as 'partially met'.	
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.	Overflight of Rainham & Canvey Marshes & Wallasea Island. Flight path is over Crouch & Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC, Colne Estuary SPA and Ramsar, and Dengie SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Extra track miles. Flight path is over Crouch & Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC, Colne Estuary SPA and Ramsar, and Dengie SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Extra track miles due to the wraparound of this swathe.	
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.	No increase in new controlled airspace foreseen.	
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.	No increase in complexity foreseen.	
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.	Possible conflict with arrival swathe A05-SE-G. Possible conflict with London City Airport, to be discussed in future bilaterals should this option be taken forward. However, the assumption is, due to the wrap around and additional track miles, traffic will be above the London City arrivals.	
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 potentially afford opportunity for Continuous Climb Operations i.e., removing the need to stop climb at 3000ft.	
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.	

Table 6: Option D05-S-B DP Assessment

4.3. Option **D05-S-C**

Survey Question

'DEPARTURES Runway 05 – South/ Southeast

Do you think we have correctly applied the Design Principles to swathe **D05-S-C**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

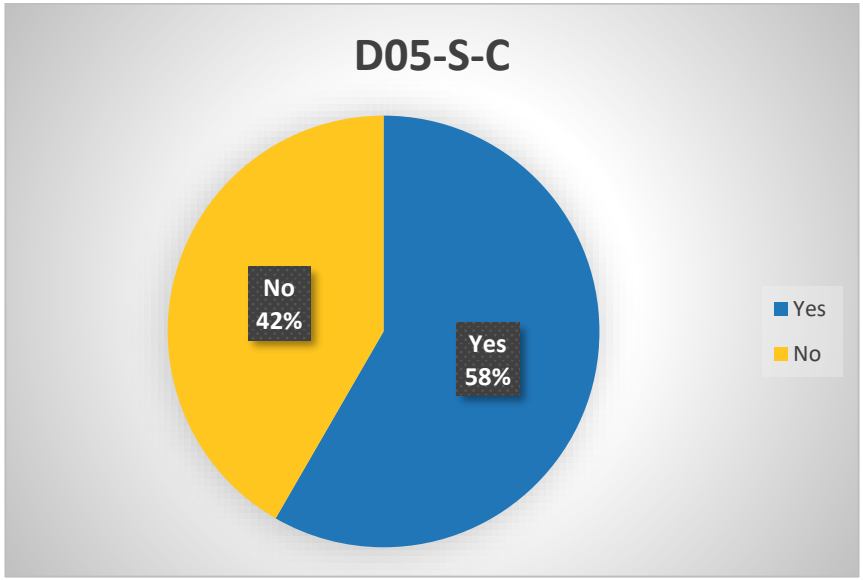

Figure 10: Option D05-S-C Survey Response

Stakeholder feedback with our responses in **BOLD.**

Need to guide traffic away from Danger Zone, which makes C pretty undesirable.

Addressed in assessment.

'No; DP1 & DP6: Swathe C completely overlapping the DA which is frequently active'.

LSA agree, and we have amended our assessment of DP1 and DP6.

'No; Departures runway 05 South /Southeast D05 C DP 2 Over flight DP 3 Noise DP 4 Tranquillity. This could be adopted if the initial routings kept the aircraft along the river crouch to potton creek keeping them away from overflying the towns of Southend, Shoeburyness Great and Little Wakering and Barling or ensuring the aircraft fly not below 6000' over these areas. Utilisation/ coordination of the DA/ other air traffic control agencies would have to be more proactive and should be easy to co -ordinate allowing aircraft unrestricted climb to their cruise altitude.' Where applicable we have addressed and included these comments in the assessment.

Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

'No; 3,4,5 – Flight path is over Crouch and Roach Estuaries SPA and Ramsar site, Benfleet and Southend Marshes SPA and Ramsar site, Foulness SPA and Ramsar and Thames Estuary & Marshes SPA and Ramsar, Outer Thames Estuary SPA and the Swale SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB may also be impacted.'

LSA agree and we have amended our assessment of DP4.

'05 S B used to be the only departure procedure for runway 05, which was replaced by 05 S A few years ago with aircraft departing 05 and flying over the villages of Stonebridge, Little and Great Wakering Barling Shoeburyness in the climb but restricted on altitude by London ATC both S A and S B should be replaced by S C avoids flying over the population and wildlife areas therefore making the departures safer, but would involve coordination with the military DA authorities, as there will be scheduled services using this route pre planning of their activities wouldn't be an issue avoiding the departure times of aircraft.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D05-S-C	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.	Crouch & Roach Estuaries SPA and Ramsar site, Southend Marshes SPA and Ramsar site, Foulness SPA and Ramsar and Thames Estuary & Marshes SPA and Ramsar, Outer Thames Estuary SPA and the Swale SPA and Ramsar site; 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.	This option would mean extra track miles, although marginal, than today's baseline (do nothing) option.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Additional work would need to be done for this option to meet the Operational Requirements DP due to its transit through the DA..	
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.	No new volume of controlled airspace would be required.	
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 reduction in complexity due to the swathe being further away from the LTMA and associated airfields.	
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 A05-SE-F & A05-SE-E. Possible conflict with London City procedures. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	This option would mean extra track miles, although marginal, than today's baseline (do nothing) option, and as such would mean a potential increase in Operational Cost.	
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.	

Table 7: Option D05-S-C DP Assessment

5. Departures Runway 23 – Northeast

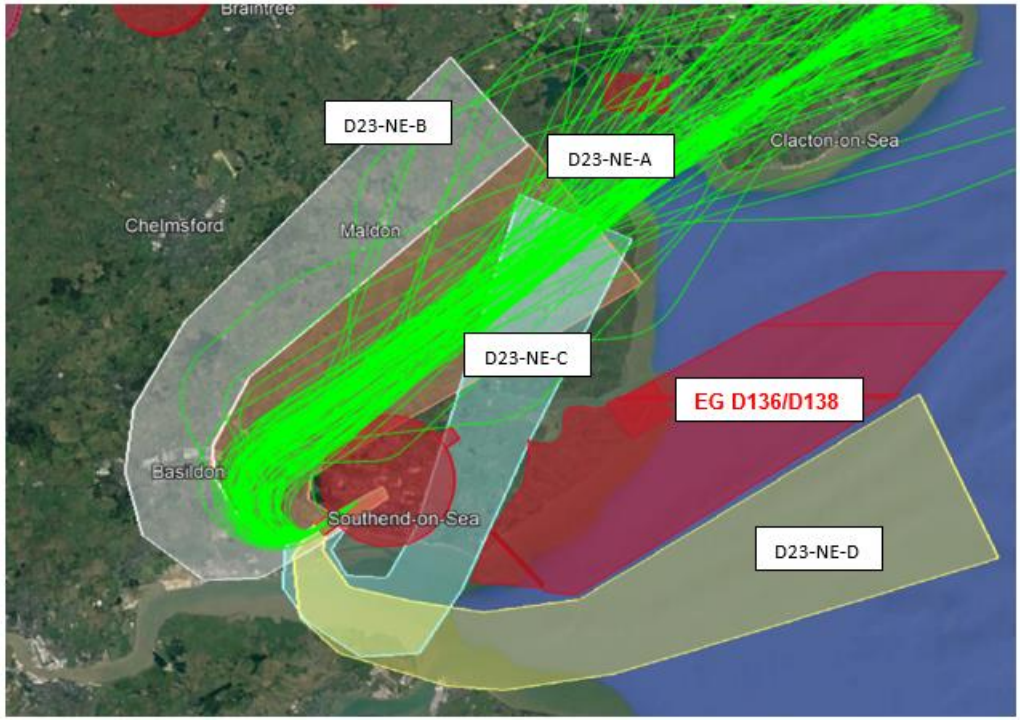

Figure 11: Departure Options Runway 23 - Northeast

5.1. Option **D23-NE-A**

Survey Question

'DEPARTURES Runway 23 – Northeast

Do you think we have correctly applied the Design Principles to swathe **D23-NE-A**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

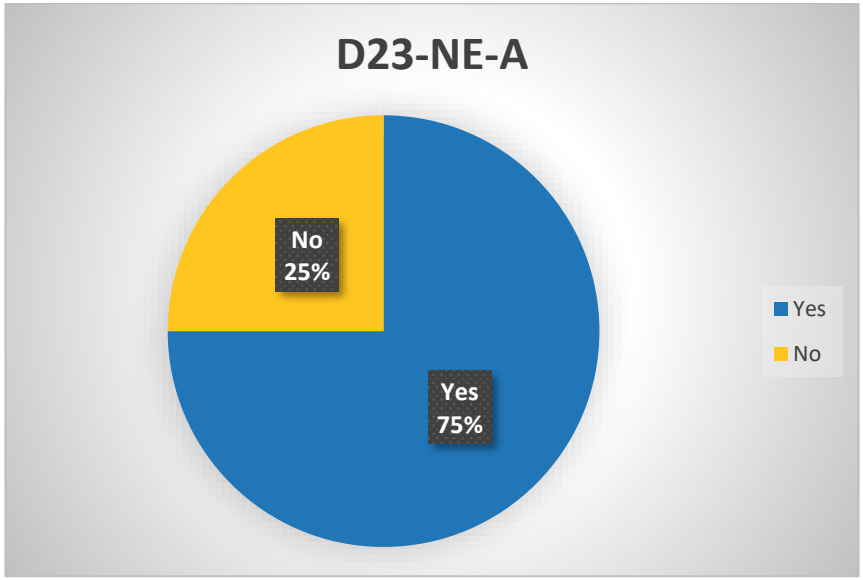

Figure 12: Option D23-NE-A Survey Response

Stakeholder feedback with our responses in **BOLD.**

'No; Departures 23 Northeast D23 NE A DP 2 Over flight DP 3 Noise DP 4 Tranquillity procedure to be re written to ensure the aircraft are 1,000' higher at the point before they turn and change acceleration altitude to 4000.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

'No;3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Crouch & Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

'Allow aircraft to climb efficiently gaining the most altitude whilst covering the shortest distance across the ground. Using departure procedure 2 and removing altitude restrictions or allowing aircraft to turn north abeam Tesco and keep within 1.5 nm of the threshold heading North but East of Hockley avoiding the populated areas would be advantageous and can be achieved by RNP positions.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D23-NE-A	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.	No initial safety concerns. Today's baseline and our current 'do nothing' option falls within this swathe.	
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.	Today's baseline and our current 'do nothing' option falls within this swathe. No impact on DP.	
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.	Today's baseline and our current 'do nothing' option falls within this swathe. No impact on DP.	
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.	Potential overflight of Dengie National Nature Reserve, Benfleet, and Southend Marshes SPA and Ramsar site, Crouch & Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Today's baseline and our current 'do nothing' option falls within this swathe. No impact on DP.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Today's baseline and our current 'do nothing' option falls within this swathe. No impact on DP.	
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.	Today's baseline and our current 'do nothing' option falls within this swathe. No impact on DP.	
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.	Today's baseline and our current 'do nothing' option falls within this swathe. No impact on DP.	
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.	Today's baseline and our current 'do nothing' option falls within this swathe. No impact on DP.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Today's baseline and our current 'do nothing' option falls within this swathe. No impact on DP.	
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. Further 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.	

Table 8: Option D23-NE-A DP Assessment

5.2. Option **D23-NE-B**

Survey Question

'DEPARTURES Runway 23 – Northeast

Do you think we have correctly applied the Design Principles to swathe **D23-NE-B**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

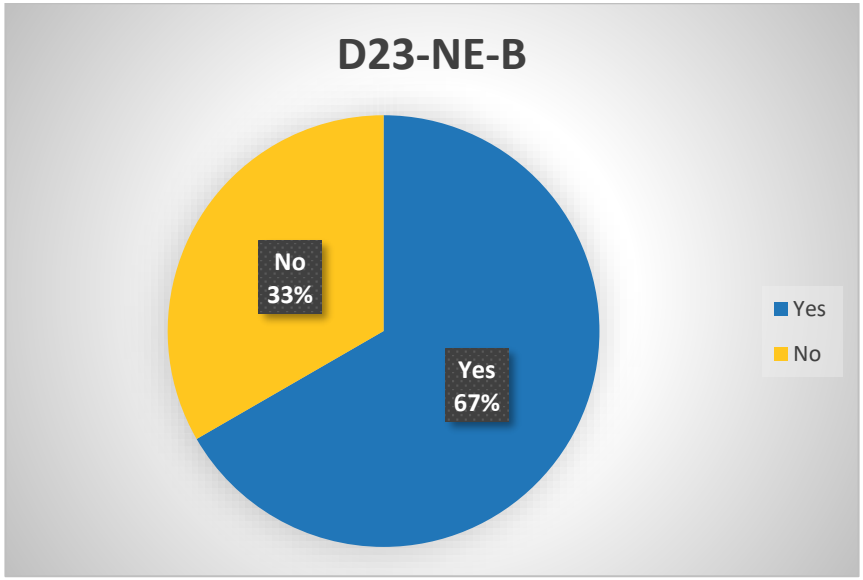

Figure 13: Option D23-NE-B Survey Response

Stakeholder feedback with our responses in **BOLD.**

'No; Departures' 23 Northeast D23-NE- B DP 2 Over flight DP 3 Noise DP 4 Tranquillity procedure to be re written to ensure the aircraft are 1,000' higher at the point before they turn and change acceleration altitude to 4000' ensure the aircraft climb straight ahead to 4000' or 3 nm before turning right then between Canvey Island and South Benfleet then North bound when passing 5000' or bowers Gifford follow the A130 northbound.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

'DP10 - Systemisation. There appears to be no interaction with STN traffic below 7,000ft but the wider turn of this swathe creates a greater chance of interaction with future STN departures to the East within the network (compared to swathes A, C and D).'

LSAagree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

'Allow aircraft to climb efficiently gaining the most altitude whilst covering the shortest distance across the ground. Using departure procedure 2 and removing altitude restrictions or allowing aircraft to turn North abeam Tesco and keep within 1.5 nm of the threshold heading north but east of Hockley avoiding the populated areas would be advantageous and can be achieved by RNP positions.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D23-NE-B	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.	No initial safety concerns.	
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.	Potential increase in overflight of Canvey Island and Basildon, although at a higher level.	
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.	Potential increase in overflight of Canvey Island and Basildon, although at a higher level.	
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 and Ramsar could see a potential increase in disturbance.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Extra track miles than the baseline.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Minimal difference from 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 potentially require a slight increase in controlled airspace to contain the procedures.	
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.	Minimal difference from today's baseline operation although closer proximity to LTMA traffic could see an increase in complexity.	
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.	Potential interaction with London Stansted traffic, this swathe also moves departures closer to the LTMA and London City traffic. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Minimal difference from today's baseline 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.	

Table 9: Option D23-NE-B DP Assessment

5.3. Option **D23-NE-C**

Survey Question

'DEPARTURES Runway 23 – Northeast

Do you think we have correctly applied the Design Principles to swathe **D23-NE-C**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

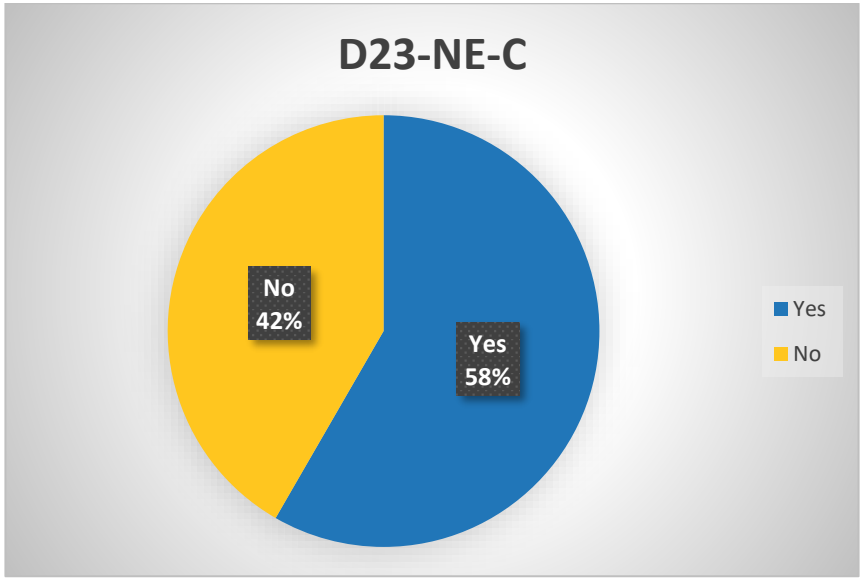

Figure 14: Option D23-NE-C Survey Response

Stakeholder feedback with our responses in **BOLD**

'No; A nightmare to fly with the DA on one side and EGMC on the other.'

LSA agree and we have amended our assessment of DP1.

'No; Swathe C would also have additional track miles.'

LSA agree and we have amended our assessment of DP5 and DP11.

'No; departure's 23 Northeast D23-NE- C DP 2 Over flight DP 3 Noise DP 4 Tranquillity this would also lead to further distance aircraft to fly, than Option B or D.'

LSA agree, and we have amended our assessment of DP2 and DP3.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Crouch and Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC, Thames Estuary and Marshes SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

'Allow aircraft to climb efficiently gaining the most altitude whilst covering the shortest distance across the ground. Using departure procedure 2 and removing altitude restrictions or allowing aircraft to turn North abeam Tesco and keep within 1.5 nm of the threshold heading north but east of Hockley avoiding the populated areas would be advantageous and can be achieved by RNP positions.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D23-NE-C	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.	This option has been assessed as Amber due to the potential for IFP protection areas to fall within the Shoeburyness DA.	
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.	There would be more people and more areas overflown due to extra track miles from today's baseline.	
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.	There would be more people and more areas overflown due to extra track miles from today's baseline.	
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.	Potential overflight of Wallasea Island & Dengie National Nature Reserve, Benfleet, and Southend Marshes SPA and Ramsar site, Crouch & Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC, Thames Estuary & Marshes SPA and Ramsar.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Extra track miles from today's baseline 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.	No new controlled airspace would be required.	
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.	
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.	No systemisation issues foreseen, this option keeps traffic away from the LTMA and associated traffic.	
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 from today's baseline 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.	

Table 10: Option D23-NE-C DP Assessment

5.4. Option **D23-NE-D**

Survey Question.

'DEPARTURES Runway 23 – Northeast

Do you think we have correctly applied the Design Principles to swathe **D23-NE-D**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

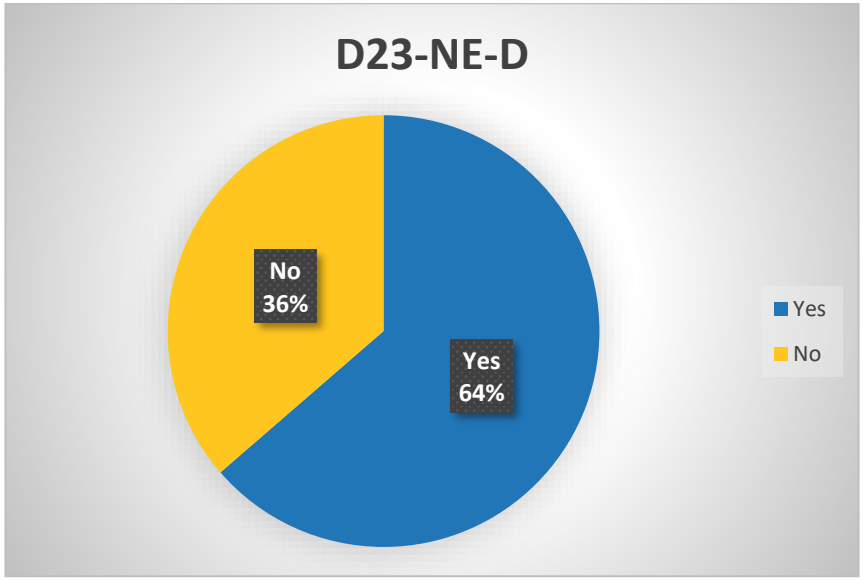

Figure 15: Option D23-NE-D Survey Response

Stakeholder feedback with our responses in **BOLD.**

'DP1/DP7/DP9 If D23-NE-C are Amber for IFP protection areas, would that not also apply to this option?'

D23-NE-C was assessed as Amber for the IFP protection areas due to the tightness of the turn inside the DA. This option does not have the same constraints, so it was assessed and remains green.

'No; Swathe D interacts with the current London City Point merge.'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary and Marshes SPA and Ramsar, Outer Thames Estuary SPA and Medway Estuary SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

'Other option would be for the aircraft to depart and turn South and East allow aircraft to climb efficiently gaining the most altitude whilst covering the shortest distance across the ground. Using departure procedure 2 and removing altitude restrictions or allowing aircraft to turn when abeam Tesco and keep climbing avoiding the populated areas would be advantageous and can be achieved by RNP positions.'

Where applicable we have addressed and included these comments in the assessment. Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D23-NE-D	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.	No initial safety concerns.	
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.	Less people overflown than today's baseline and the other options in this departure direction due to the swathe being mainly over the estuary.	
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.	Less people overflown than today's baseline and the other options in this departure direction due to the swathe being mainly over the estuary.	
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 with Operational Requirements 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.	This option could see a potential decrease in complexity.	
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. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
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.	

Table 11: Option D23-NE-D DP Assessment

6. Departures Runway 23 – Northwest

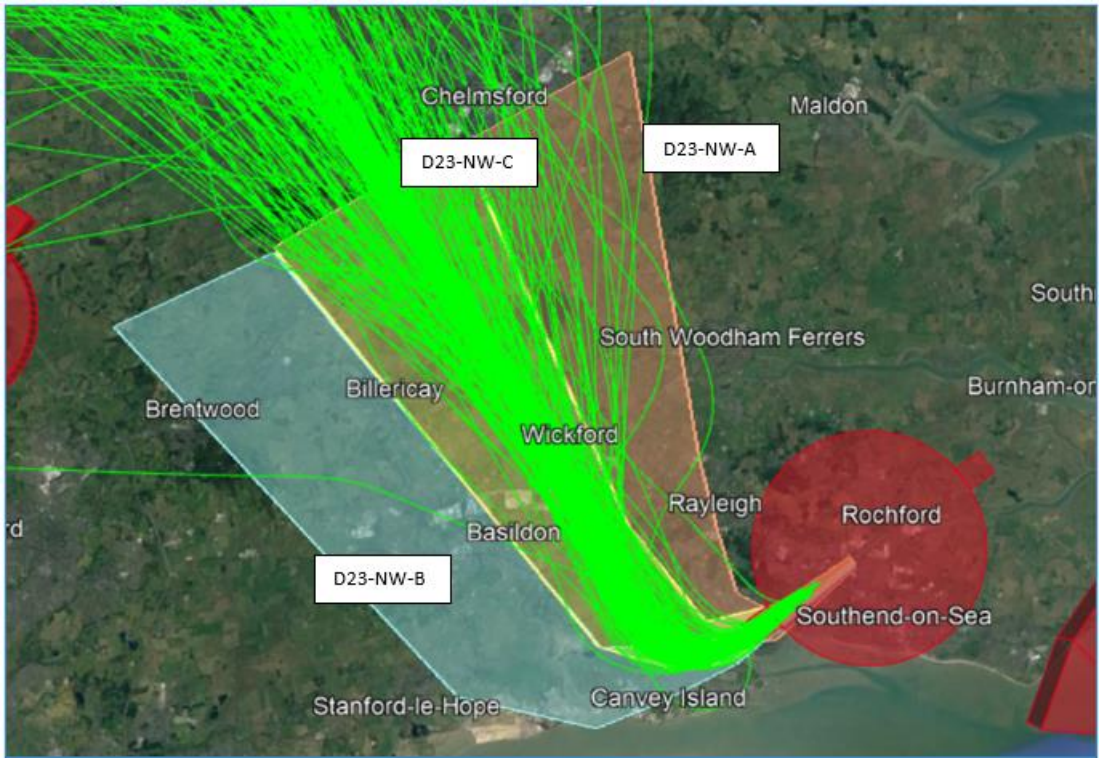

Figure 16: Departure Options Runway 23 - Northwest

6.1. Option **D23-NW-A**

Survey Question

'DEPARTURES Runway 23 – Northwest

Do you think we have correctly applied the Design Principles to swathe **D23-NW-A**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

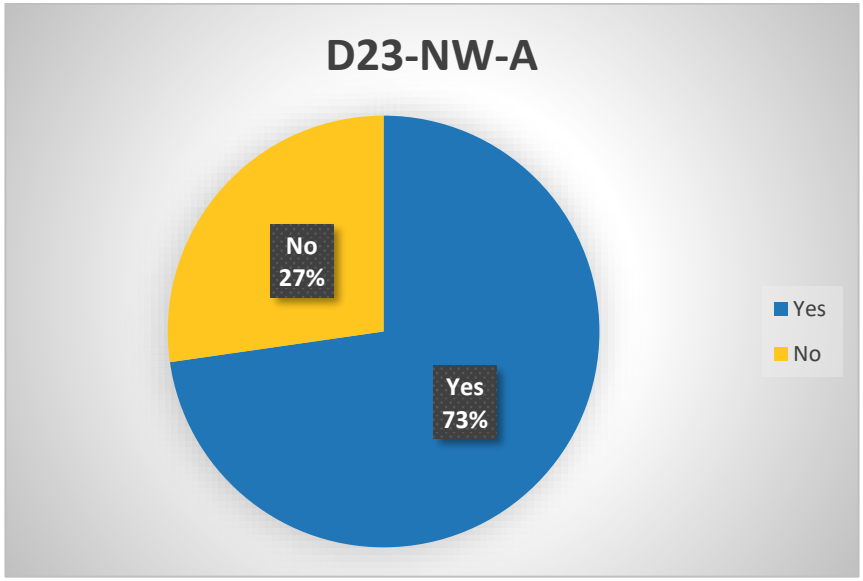

Figure 17: Option D23-NW-A Survey Response

Stakeholder feedback with our responses in **BOLD.**

'DP2/DP3 and Rayleigh.'

LSA agree and we have amended our assessment of DP2 and DP3.

'No; DP10 - Systemisation. Potential conflict with both current and future STN departures to the East. Level restrictions or ATC intervention may be required to ensure separation. There is also potential interaction with future STN Arrivals depending on position and type of the agreed holding facility with NERL. DP 12 – AMS Realisation - Design options within this swathe will interact with STN East departures options. However, Option A presents the best potential to deconflict with STN operations. As above, there may also be an interaction depending on the development of the arrivals structure within this area.'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSAagree and we have amended our assessment of DP4.

Full Design Principle Assessment

D23-NW-A	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.	No initial safety concerns.	
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.	This option could see a potential increase in overflight of Hadleigh and Rayleigh.	
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.	This option could see a potential increase in overflight of Hadleigh and Rayleigh.	
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 and Ramsar could see an increase in disturbance.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	This option could see a tight turn at low level- still PANS-OPS compliant.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	No issues anticipated.	
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.	Minimal difference from today's baseline operation.	
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.	Minimal difference from today's baseline operation.	
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.	Potential conflict with both current and future London Stansted departures to the East, however this would be the preferable option for London Southend,this could see an increased possibility for step climbs. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Minimal difference from today's baseline 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.	

Table 12: Option D23-NW-A DP Assessment

6.2. Option **D23-NW-B**

Survey Question

'DEPARTURES Runway 23 – Northwest

Do you think we have correctly applied the Design Principles to swathe **D23-NW-B**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

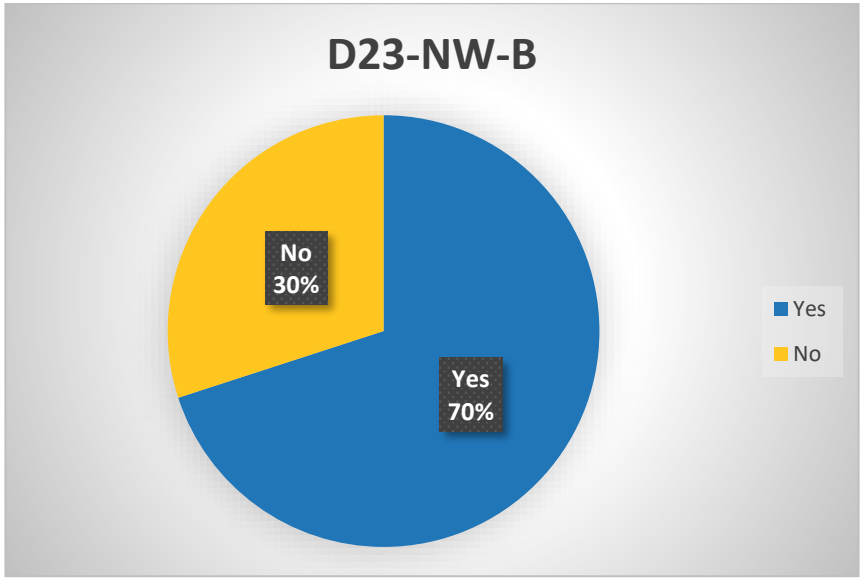

Figure 18: Option D23-NW-B Survey Response

Stakeholder feedback with our responses in **BOLD.**

'No; Newly overflown communities, additional track miles and in closer proximity to London City/LTMA traffic.'

LSA agree, and we have amended our assessment of DP10.

'No; DP10 - Systemisation. Conflict with both current and future STN Departures to the South. Level restrictions or ATC intervention may be required to ensure separation. There is also potential interaction with future STN Arrivals depending on position and type of the agreed holding facility with NERL. DP 12 – AMS Realisation - Design options within this swathe interact with STN South Departures options. Option B presents the greatest chance of interaction with future STN arrivals structures (based on current conversations with NERL).'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

D23-NW-B	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.	No initial safety concerns.	
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.	Different, but less densely populated areas 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.	Different, but less densely populated areas 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.	Langdon hills, Fobbing & Canvey/Bowers Marsh, Benfleet, and Southend Marshes SPA and Ramsar could see an increase depending on final track placement.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Minimal difference from today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Minimal difference from 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.	Depending on the final track placement there could be a need for some additional controlled airspace due to the lateral dimensions being exceeded.	
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.	This option could see a slight increase to complexity due to the closer proximity of the LTMA.	
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.	Closer proximity to LTMA traffic, increased potential for conflict with both current and future London Stansted departures to the South, this could see an increased possibility for step climbs. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Minimal difference from today's baseline 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.	

Table 13: Option D23-NW-B DP Assessment

6.3. Option **D23-NW-C**

Survey Question

'DEPARTURES Runway 23 – Northwest

Do you think we have correctly applied the Design Principles to swathe **D23-NW-C**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

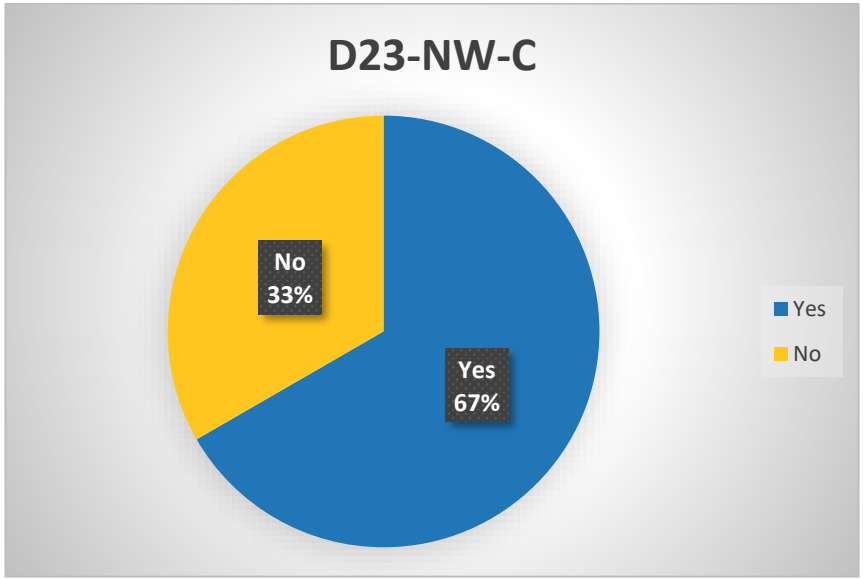

Figure 19: Option D23-NW-C Survey Response

Stakeholder feedback with our responses in **BOLD.**

'No; DP10 - Systemisation. Conflict with both current and future STN Departures to the South. Level restrictions or ATC intervention may be required to ensure separation. There is also potential interaction with future STN Arrivals depending on position and type of the agreed holding facility with NERL although less than Option B. DP 12 – AMS Realisation - Design options within this Swathe interact with STN South Departures options.'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

D23-NW-C	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.	Current baseline (do nothing) option.	
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.	Potential increase in overflight of Canvey Island and Basildon depending on placement of the final track, however this is no different to today as this is our baseline option.	
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.	Potential increase in overflight of Canvey Island and Basildon depending on placement of the final track, however this is no different to today as this is our baseline option.	
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 and Ramsar could see a slight increase depending on final track placement.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Today's current operation and our baseline option.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Today's current operation and our baseline option.	
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.	Today's current operation and our baseline option.	
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.	Today's current operation and our baseline option.	
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.	Depending on the final track placement, this option could see conflict with both current and future London Stansted departures to the South, London City traffic and LTMA traffic due to the proximity of this option. This could see an increased possibility for step climbs. With these systemisation issues in mind, the decision was made to assess this option as Amber, due to the current baseline (do nothing) option being within this swathe. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Today's current operation and our baseline option.	
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.	

Table 14: Option D23-NW-C DP Assessment

7. Departures Runway 23 – South/Southeast

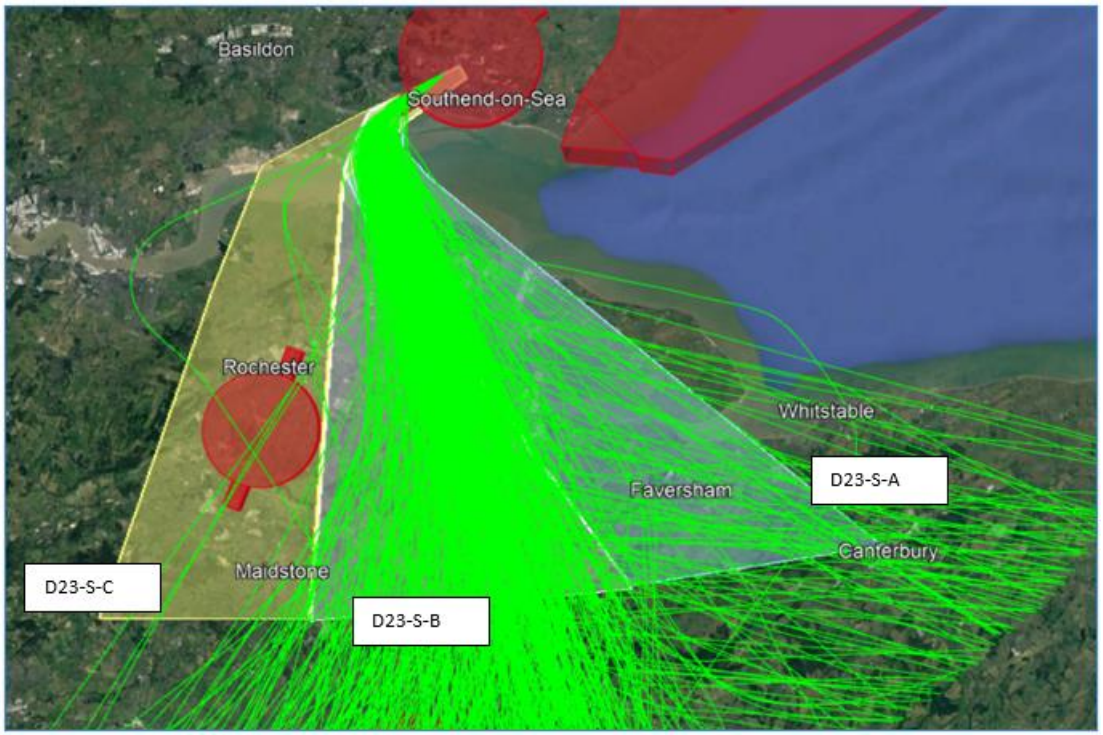

Figure 20: Departure Options Runway 23 - South/ Southeast

7.1. Option **D23-S-A**

Survey Question

'DEPARTURES Runway 23 – South/Southeast

Do you think we have correctly applied the Design Principles to swathe **D23-S-A**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

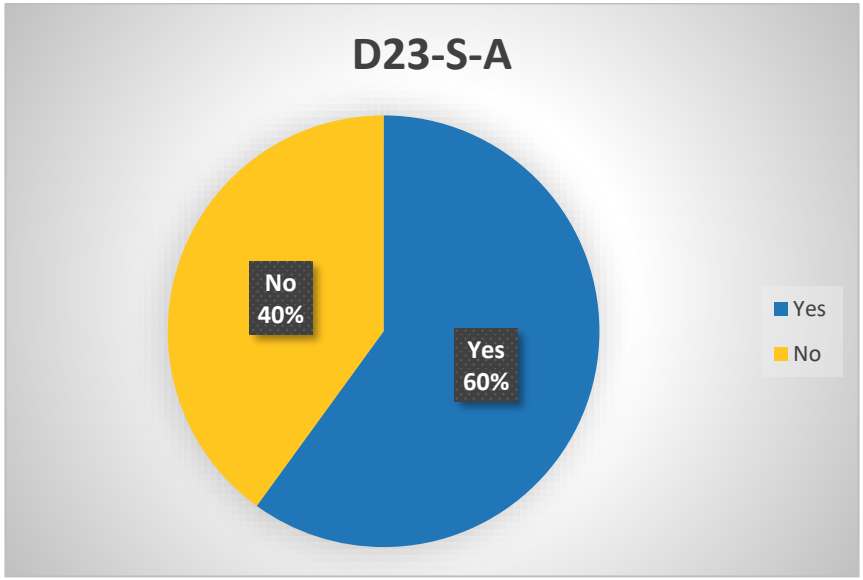

Figure 21: Option D23-S-A Survey Response

Stakeholder feedback with our responses in **BOLD.**

'All three options overfly the Kent Downs AONB impacting on its tranquillity (DP4), although we note that the current scenario involves overflying of the AONB. Option C would appear to affect a smaller area of the designated land.'

LSA agree and we have amended our assessment of DP4.

'DP2/DP3 given shift in number of tracks from current track picture, should these DPs not be at least amber (same as D05-NW-B potential increase for different communities)'

LSA agree, and we have amended our assessment of DP2 and DP3.

'No; Potential for more noise disruption in Swathe A and likely to interact with the current London City Point Merge not captured'

LSA agree, and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary and Marshes SPA and Ramsar, Medway Estuary SPA and Ramsar site and the Swale SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB may also be impacted.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

D23-S-A	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.	No initial safety concerns.	
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.	Whilst it can be seen from the NTK data that currently some departures off runway 23 to the South fall into this swathe, there is a potential increase for different communities.	
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.	Whilst it can be seen from the NTK data that currently some departures off runway 23 to the South fall into this swathe, there is a potential increase for different communities.	
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.	Kent Downs AONB, Southend Marshes SPA, Thames Estuary & Marshes SPA, Medway Estuary SPA and Ramsar all have the potential to see increases in disturbance.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Minimal difference from today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Minimal difference from 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.	No new volume of controlled airspace would be required.	
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.	Minimal difference from today's baseline operation.	
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 arrival swathes A23-SE-E & A23-SE-F. This option could also conflict with the London City point merge. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Minimal difference from today's baseline 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.	

Table 15: Option D23-S-A DP Assessment

7.2. Option **D23-S-B**

Survey Question

'DEPARTURES Runway 23 – South/Southeast

Do you think we have correctly applied the Design Principles to swathe **D23-S-B**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

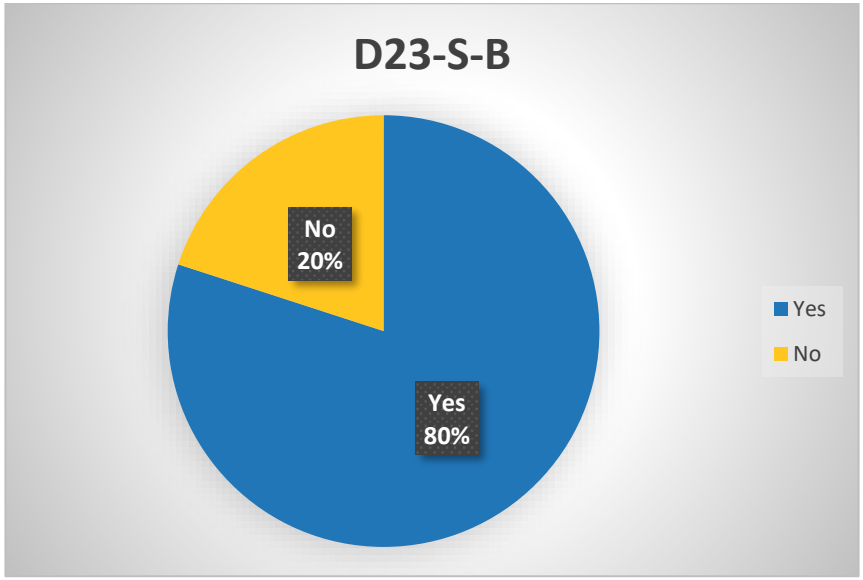

Figure 22: Option D23-S-B Survey Response

Stakeholder feedback with our responses in **BOLD.**

'All three options overfly the Kent Downs AONB impacting on its tranquillity (DP4), although we note that the current scenario involves overflying of the AONB. Option C would appear to affect a smaller area of the designated land.'

LSA agree and we have amended our assessment of DP4 to reflect this, although this option is no different to the current tracks and our baseline so there would be no significant increase.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary and Marshes SPA and Ramsar, Medway Estuary and Marshes SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB may also be impacted'

LSA agree, and we have amended our assessment of DP4 to reflect this, although this option is no different to the current tracks and our baseline so there would be no significant increase.

Full Design Principle Assessment

D23-S-B	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.	No initial safety concerns.	
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.	Today's current operation and our baseline (do nothing) option falls within this swathe, however, depending on position of final track there is a potential increase in overflight of Rainham & Hempstead.	
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.	Today's current operation and our baseline (do nothing) option falls within this swathe, however, depending on position of final track there is a potential increase in overflight of Rainham & Hempstead.	
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.	Overflight of Kent Downs AONB, Benfleet and Southend Marshes SPA, Thames Estuary & Marshes SPA, Medway Estuary & Marshes SPA and Ramsar - although this would be no different to today's operation and our baseline (do nothing) option.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Currently today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Currently 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.	No new volume of controlled airspace would be required.	
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.	Currently today's baseline operation.	
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.	No foreseen systemisation issues currently, this is the current baseline operation.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Currently today's baseline 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.	

Table 16:Option D23-S-B DP Assessment

7.3. Option **D23-S-C**

Survey Question

'DEPARTURES Runway 23 – South/Southeast

Do you think we have correctly applied the Design Principles to swathe **D23-S-C**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

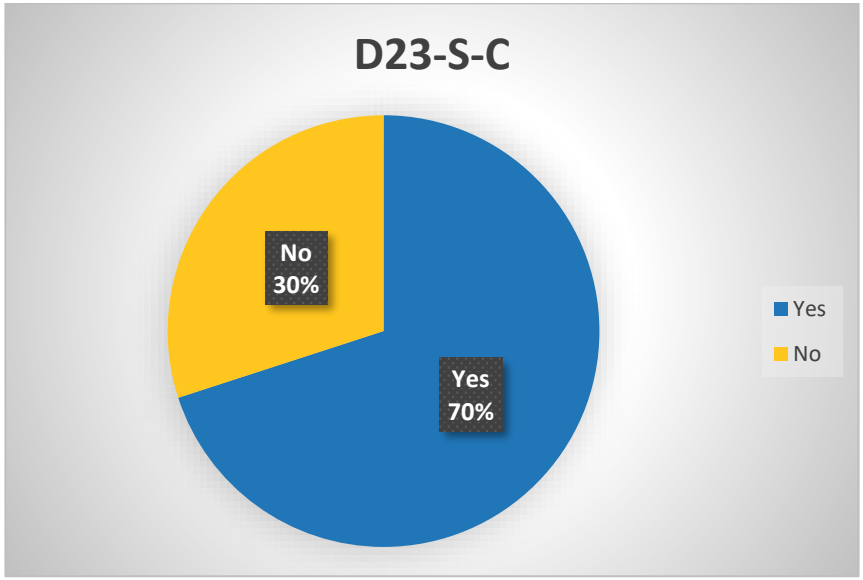

Figure 23: Option D23-S-C Survey Response

Stakeholder feedback with our responses in **BOLD.**

'All three options overfly the Kent Downs AONB impacting on its tranquillity (DP4), although we note that the current scenario involves overflying of the AONB. Option C would appear to affect a smaller area of the designated land.'

LSA agree and we have amended our assessment of DP4.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary and Marshes SPA and Ramsar, Medway Estuary and Marshes SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB may also be impacted.'

LSA agree and we have amended our assessment of DP4.

'Allow aircraft maximum rate of climb.'

Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

D23-S-C	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.	No initial safety concerns.	
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.	Potential increase in overflight of different areas, for example - Canvey Island, Gillingham & Rochester.	
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.	Potential increase in overflight of different areas, for example - Canvey Island, Gillingham & Rochester.	
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.	Overflight of Kent Downs AONB, Benfleet and Southend Marshes SPA, Thames Estuary & Marshes SPA, Medway Estuary & Marshes SPA and Ramsar.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Marginal extra track miles than the baseline option but not significant.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Minimal difference from 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 potentially require a slight increase in controlled airspace to contain the procedures.	
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.	Minimal difference from today's baseline operation.	
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.	This option would move the departures for this runway and direction closer to LTMA 1 and London Gatwick Airport's traffic. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Marginal extra track miles than the baseline option but not significant.	
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.	

Table 17: Option D23-S-C DP Assessment

8. Arrivals Runway 05 – Northwest

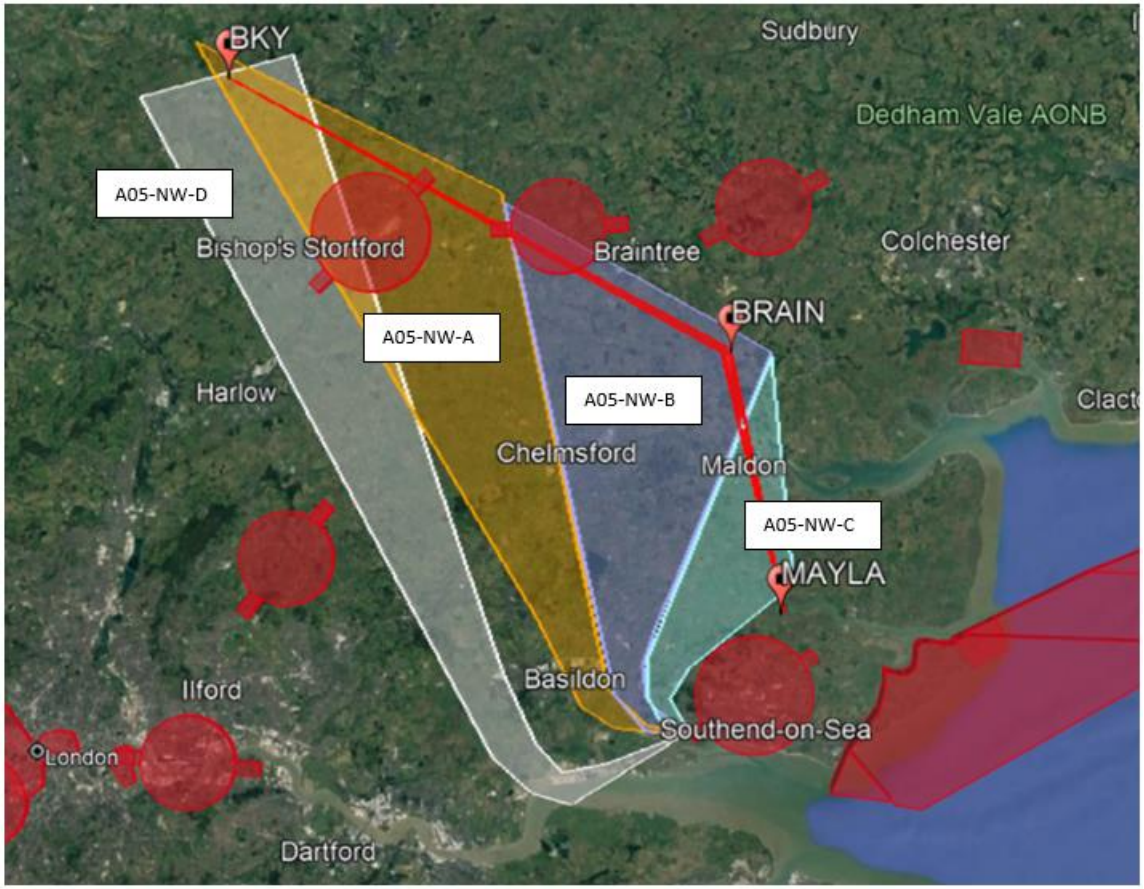

Figure 24: Arrival Options Runway 05 - Northwest

8.1. Option **A05-NW-A**

Survey Question

'ARRIVALS Runway 05 - Northwest

Do you think we have correctly applied the Design Principles to swathe A05-NW-A?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

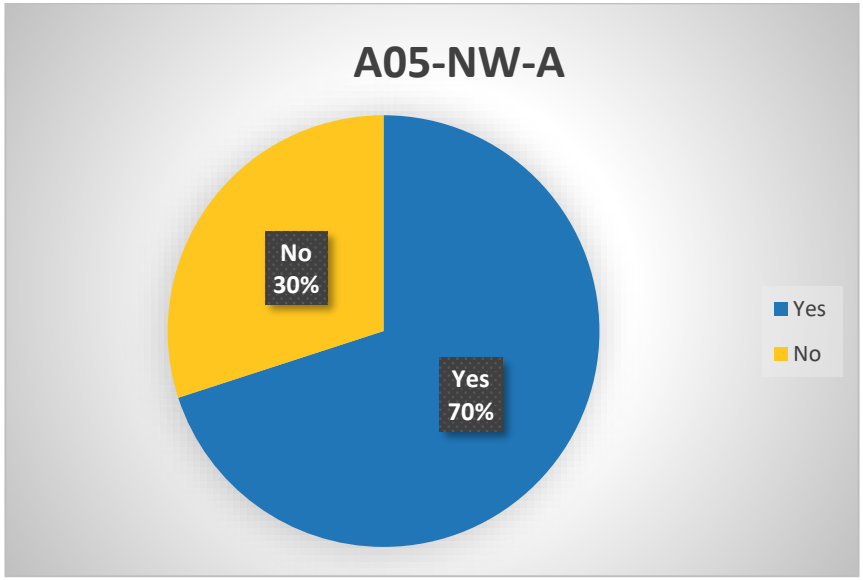

Figure 25: Option A05-NW-A **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'DP2/DP3 very few existing arrival tracks in this area so likely increase for both DPs'

LSA agree and we have amended our assessment of DP2 and DP3.

'No; DP8 and DP10: Interacts with Stansted and London City traffic. Network connectivity would increase complexity if more than one of these routes was chosen.'

LSA agree and we have amended our assessment of DP10.

'No; DP10 - Systemisation. Potential for multiple interactions with both current and future STN Departures to the East and South. Level restrictions or ATC intervention may be required to ensure separation. There is also potential interaction with future STN Arrivals depending on position and type of the agreed holding facility with NERL. DP 12 - AMS Realisation - Potential for multiple interactions with STN Departures to East, Northeast, Southeast and South. Evaluation for A05-NW-A, and A05-NW-D design options do not account for proximity to STN/LTMA operations.'

LSA agree and we have amended our assessment of DP10.

Full Design Principle Assessment

A05-NW-A	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.	No initial safety concerns.	
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.	Potential to increase concentration over eastern Basildon.	
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.	Potential to increase noise over eastern Basildon.	
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.	No obvious impact upon sites of tranquillity.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Reasonably direct route that would minimise emissions and fuel burn.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	This swathe is assessed as having met the Operational Requirements DP.	
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.	No new controlled airspace would be required.	
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 complexity issues with proximity to LTMA traffic, but no different from today's operation.	
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.	Potential interactions with London Stansted and London City traffic. Network connectivity would increase complexity if more than one of these routes was chosen. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Reasonably direct route that would minimise emissions and fuel burn.	
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.	

Table 18: Option A05-NW-A DP Assessment

8.2. Option **A05-NW-B**

Survey Question

'ARRIVALS Runway 05 - Northwest

Do you think we have correctly applied the Design Principles to swathe **A05-NW-B**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

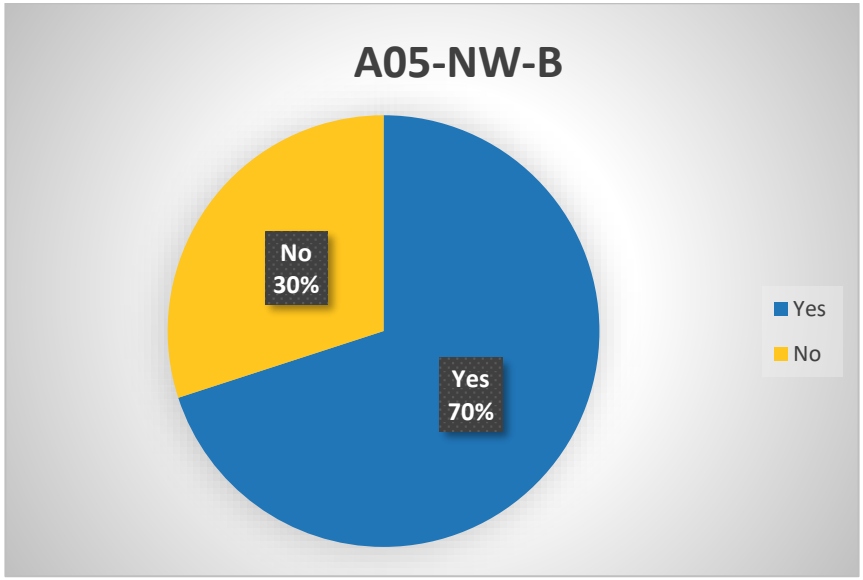

Figure 26: Option A05-NW-B **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'DP2/DP3 very few existing arrival tracks in this area so likely increase for both DPs.'

LSA agree and we have amended our assessment of DP2 and DP3.

'DP8 and DP10: Network connectivity would increase complexity if more than one of these routes was chosen.'

LSA agree and we have amended our assessment of DP10.

'No; DP10 - Systemisation. Potential for multiple interactions with both current and future STN Departures to the East. Level restrictions or ATC intervention may be required to ensure separation. There is also potential interaction with future STN Arrivals depending on position and type of the agreed holding facility with NERL. DP 12 - AMS Realisation - Potential for multiple interactions with STN departures to East. However, the Eastern edge of this swathe provides for significantly reduced interaction. E. uation for A05-NW-A, and A05-NW-D design options do not account for proximity to STN/LTMA operations'

LSA agree and we have amended our assessment of DP10.

Full Design Principle Assessment

A05-NW-B	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.	No initial safety concerns.	
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.	Potential to increase concentration over eastern Basildon.	
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.	Potential to increase noise over eastern Basildon.	
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.	No obvious impact upon sites of tranquillity.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Reasonably direct route that would minimise emissions and fuel burn.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	This swathe is assessed as having met the Operational Requirements DP.	
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.	No new controlled airspace would be required.	
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.	Network connectivity could increase complexity but no more than today's operation.	
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 London Southend departure swathes D05-NW-A and D05-NW-B. Potential for multiple interactions with both current and future London Stansted departures to the East. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Reasonably direct route that would minimise emissions and fuel burn.	
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.	

Table 19: Option A05-NW-B DP Assessment

8.3. Option **A05-NW-C**

Survey Question

'ARRIVALS Runway 05 - Northwest

Do you think we have correctly applied the Design Principles to swathe **A05-NW-C**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

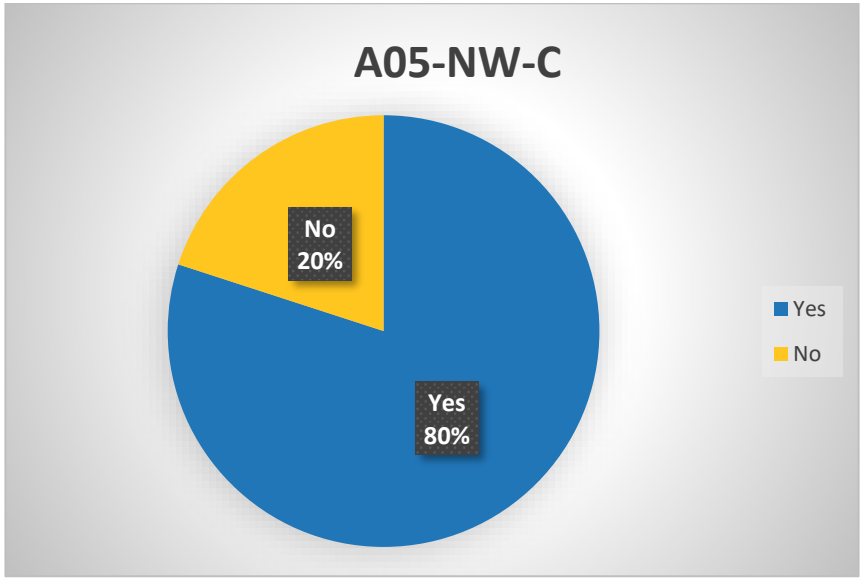

Figure 27: Option A05-NW-C **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'No; DP8 and DP10: Interacts with SS and LC traffic. Network connectivity would increase complexity if more than one of these routes was chosen.'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Blackwater Estuary SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSAagree and we have amended our assessment of DP4.

Full Design Principle Assessment

A05-NW-C	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.	No initial safety concerns.	
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.	Blackwater Estuary SPA and Ramsar could see an increase in overflights.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Extra track miles from the other options but no different to today's operation- there are currently not many arrivals from this direction, so the baseline (do nothing option) falls within this swathe.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Currently, there are not many arrivals from this direction, so the baseline (do nothing option) falls within this swathe.	
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.	Currently, there are not many arrivals from this direction, so the baseline (do nothing option) falls within this swathe.	
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.	Currently, there are not many arrivals from this direction, so the baseline (do nothing option) falls within this swathe.	
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-NW-A and D05-NW-B. Potential interactions with London Stansted and London City traffic. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
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 from the other options but no different to today's operation- there are currently not many arrivals from this direction, so the baseline (do nothing option) falls within this swathe.	
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.	

Table 20: Option A05-NW-C DP Assessment

8.4. Option **A05-NW-D**

Survey Question

'ARRIVALS Runway 05 - Northwest

Do you think we have correctly applied the Design Principles to swathe **A05-NW-D**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

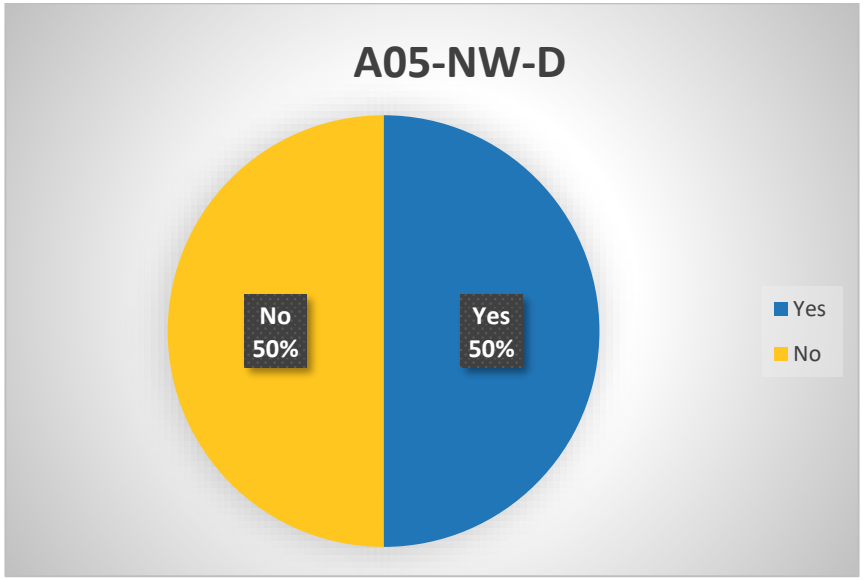

Figure 28: Option A05-NW-D **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'Would there be increased impacts on Canvey Island re Principles 2 and 3.'

LSA agree and we have amended our assessment of DP2 and DP3.

'DP2/DP3 very few existing arrival tracks in this area so likely increase for both DPs.'

LSA agree and we have amended our assessment of DP2 and DP3.

'No; DP8 and DP10: Network connectivity would increase complexity if more than one of these routes was chosen.'

LSA agree and we have amended our assessment of DP10.

'No; DP10 - Systemisation. Potential for multiple interactions with both current and future STN Departures to the East. Level restrictions or ATC intervention may be required to ensure separation. There is also potential interaction with future STN Arrivals depending on position and type of the agreed holding facility with NERL. DP 12 - AMS Realisation - Potential for multiple interactions with STN departures to East. However, the Eastern edge of this swathe provides for significantly reduced interaction. E. uation for A05-NW-A, and A05-NW-D design options do not account for proximity to STN/LTMA operations.'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary and Marshes SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A05-NW-D	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.	No initial safety concerns.	
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.	Very few existing arrival tracks in this area so likely increase to number of 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.	Very few existing arrival tracks in this area so likely increase to noise footprint.	
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 and Ramsar site, Thames Estuary & Marshes SPA and Ramsar could see an increase in overflights.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Reasonably direct route that would minimise emissions and fuel burn.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	This swathe is assessed as having met the Operational Requirements DP.	
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.	No new controlled airspace would be required.	
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.	Network connectivity could increase complexity.	
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.	Potential for multiple interactions with both current and future London Stansted departures to the East. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Reasonably direct route that would minimise emissions and fuel burn.	
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.	

Table 21: Option A05-NW-D DP Assessment

9. Arrivals Runway 05 – South & East

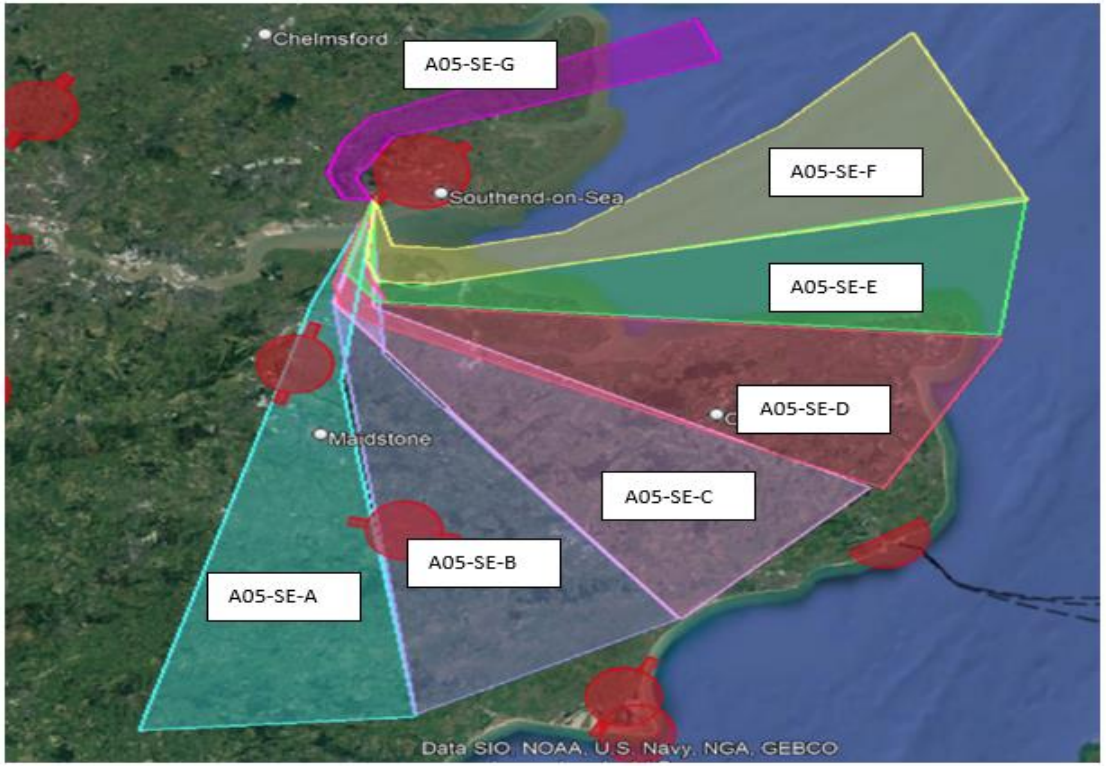

Figure 29: Arrival Options Runway 05 - South & East

9.1. Option **A05-SE-A**

Survey Question

'ARRIVALS Runway 05 - South and East

Do you think we have correctly applied the Design Principles to swathe **A05-SE-A**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

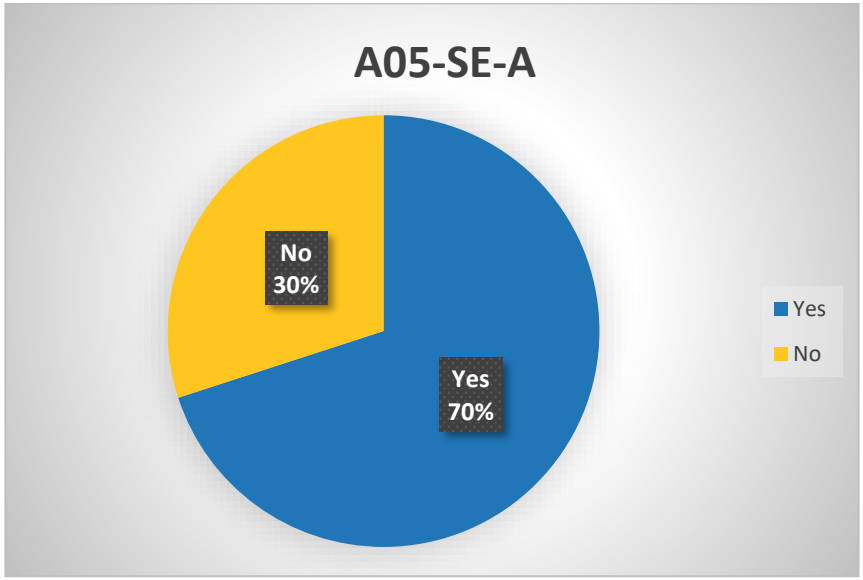

Figure 30: Option A05-SE-A **Survey Response**

Stakeholder feedback with our responses in **BOLD**

'No; Options A, B, and C would result in more concentrated flight paths over the Kent Downs AONB and therefore should, in our view, be assigned an amber rating for DP4.'

LSA agree and we have amended our assessment of DP4.

'No; Tactically achieved in today's operation but only when deconflicted from LTMA departing traffic to the SE.'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary and Marshes SPA and Ramsar, Medway Estuary and Marshes SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB and High Weald AONB may also be impacted.'

LSA agree and we have amended our assessment of DP4.

'Arrivals allow aircraft a constant 500' 1000' descent rate which will keep engine power at a minimum and slow down, so they are 180kts at 10 miles slowing to 160kts then from 4nm free speed which is best for noise and fuel burn.'

Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

A05-SE-A	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.	No initial safety concerns.	
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.	Increased lower-level overflight of Maidstone.	
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.	Increased lower-level overflight of Maidstone.	
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.	More concentrated flight paths over the Kent Downs AONB, Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary & Marshes SPA and Ramsar, Medway Estuary & Marshes SPA and Ramsar.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Less track miles than today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Shorter more expeditious route.	
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.	No new controlled airspace required.	
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 for more interactions with LTMA traffic, however this is a more direct route avoiding the extra track miles and proximity to the Shoeburyness 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.	Potential interaction with London City traffic and London Gatwick airport current procedures. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Less track miles than today's baseline 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.	

Table 22: Option A05-SE-A DP Assessment

9.2. Option **A05-SE-B**

Survey Question

'ARRIVALS Runway 05 - South and East

Do you think we have correctly applied the Design Principles to swathe **A05-SE-B**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

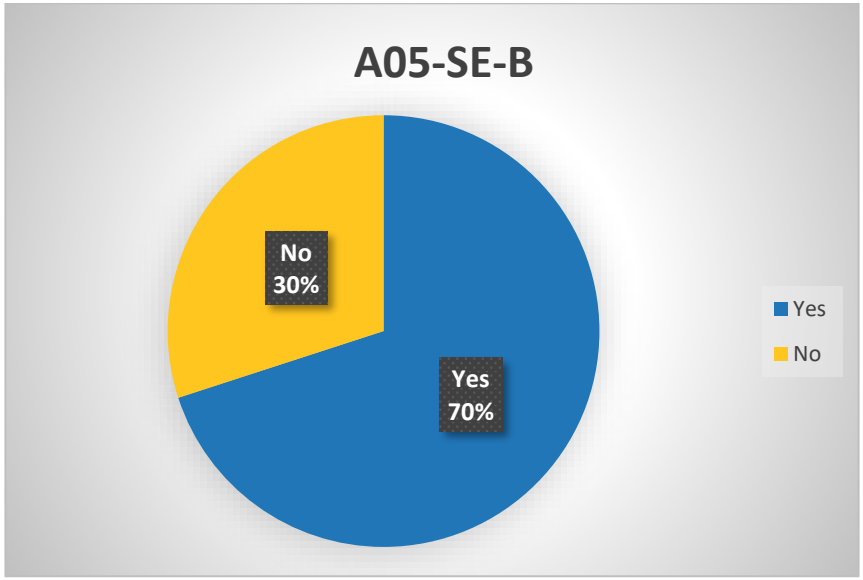

Figure 31: Option A05-SE-B **Survey Response**

Stakeholder feedback with our responses in **BOLD**.

'No; Options A, B, and C would result in more concentrated flight paths over the Kent Downs AONB and therefore should, in our view, be assigned an Amber rating for DP4.'

LSA agree and we have amended our assessment of DP4.

'No; Tactically achieved in today's operation but only when deconflicted from LTMA departing traffic to the SE'.

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary and Marshes SPA and Ramsar, Medway Estuary & Marshes SPA and Ramsar site and Dungeness and Romney Marsh SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB and High Weald AONB may also be impacted.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A05-SE-B	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.	No initial safety concerns.	
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.	More concentrated flight paths over the Kent Downs AONB, Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary & Marshes SPA and Ramsar, Medway Estuary & Marshes SPA and Ramsar.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Less track miles than today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Shorter more expeditious route.	
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.	No new controlled airspace required.	
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.	No increase in complexity anticipated.	
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.	Potential interaction with London City traffic. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Less track miles than today's baseline operation so better fuel efficiency.	
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.	

Table 23: Option A05-SE-B DP Assessment

9.3. Option **A05-SE-C**

Survey Question

'ARRIVALS Runway 05 - South and East

Do you think we have correctly applied the Design Principles to swathe **A05-SE-C**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

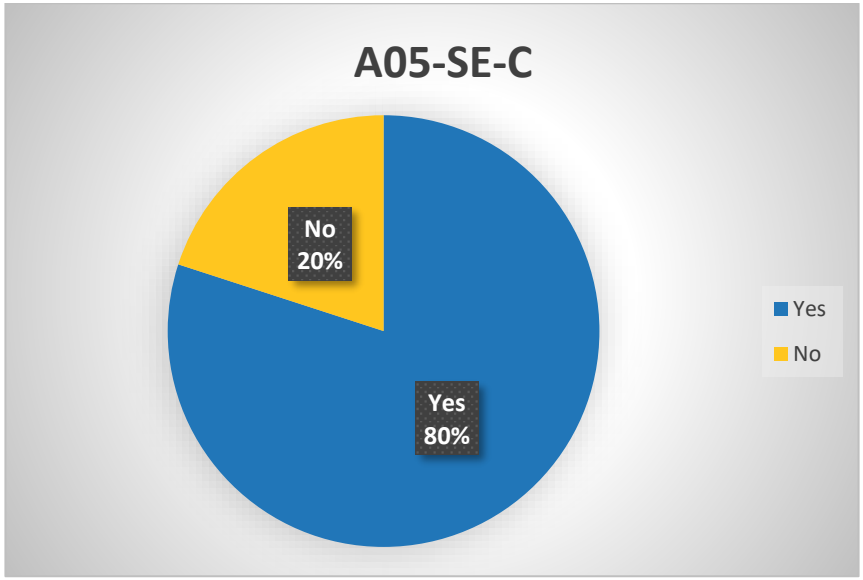

Figure 32: Option A05-SE-C **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'No; Options A, B, and C would result in more concentrated flight paths over the Kent Downs AONB and therefore should, in our view, be assigned an amber rating for DP4.'

LSA agree and we have amended our assessment of DP4.

'Yes; Tactically achieved in today's operation but only when deconflicted from LTMA departing traffic to the SE. Swathe C may be suitable if arrivals were underneath the LC point merge.'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary and Marshes SPA and Ramsar, Medway Estuary and Marshes SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB may also be impacted'.

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A05-SE-C	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.	No initial safety concerns.	
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 number of 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 number of 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.	More concentrated flight paths over the Kent Downs AONB, Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary & Marshes SPA and Ramsar, Medway Estuary & Marshes SPA and Ramsar.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Less track miles than today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Shorter more expeditious route.	
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.	No new controlled airspace required.	
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.	No increase in complexity anticipated.	
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.	Tactically achieved in today's operation but only when deconflicted from LTMA departing traffic to the SE. Swathe C may be suitable if arrivals were underneath the London City point merge. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Less track miles than today's baseline operation so better fuel efficiency.	
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.	

Table 24: Option A05-SE-C DP Assessment

9.4. Option **A05-SE-D**

Survey Question

'ARRIVALS Runway 05 - South and East

Do you think we have correctly applied the Design Principles to swathe **A05-SE-D**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

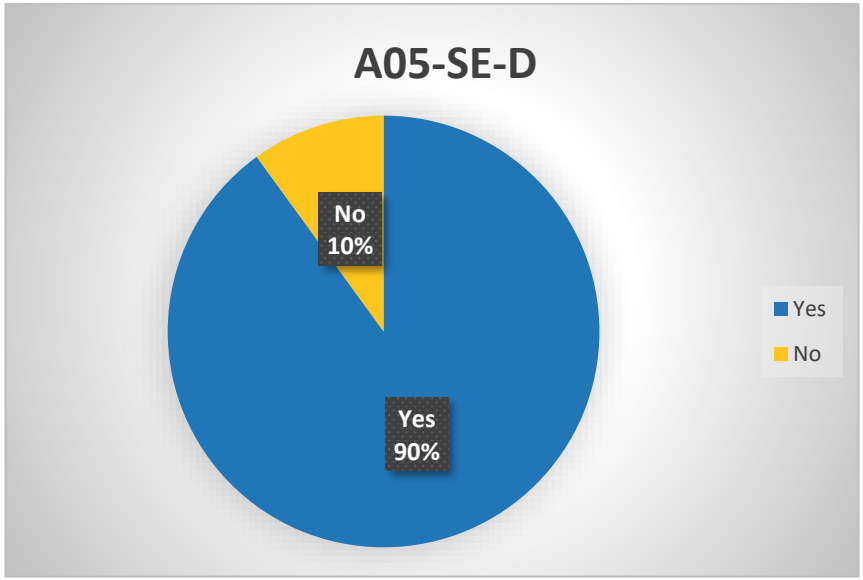

Figure 33: Option A05-SE-D **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'Yes; Swathe D may be suitable if arrivals were underneath the LC point merge.'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary and Marshes SPA and Ramsar, Medway Estuary & Marshes SPA and Ramsar, The Swale SPA and Ramsar site, Stodmarsh SPA and Ramsar site and Thanet Coast and Sandwich Bay SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A05-SE-D	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.	No initial safety concerns.	
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.	Less track miles than today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Shorter more expeditious route.	
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.	No new controlled airspace required.	
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.	No increase in complexity anticipated.	
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 signer 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.	Swathe D may be suitable if arrivals were underneath the London City point merge. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Less track miles than today's baseline operation so better fuel efficiency.	
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.	

Table 25: Option A05-SE-D DP Assessment

9.5. Option **A05-SE-E**

Survey Question

'ARRIVALS Runway 05 - South and East

Do you think we have correctly applied the Design Principles to swathe **A05-SE-E**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

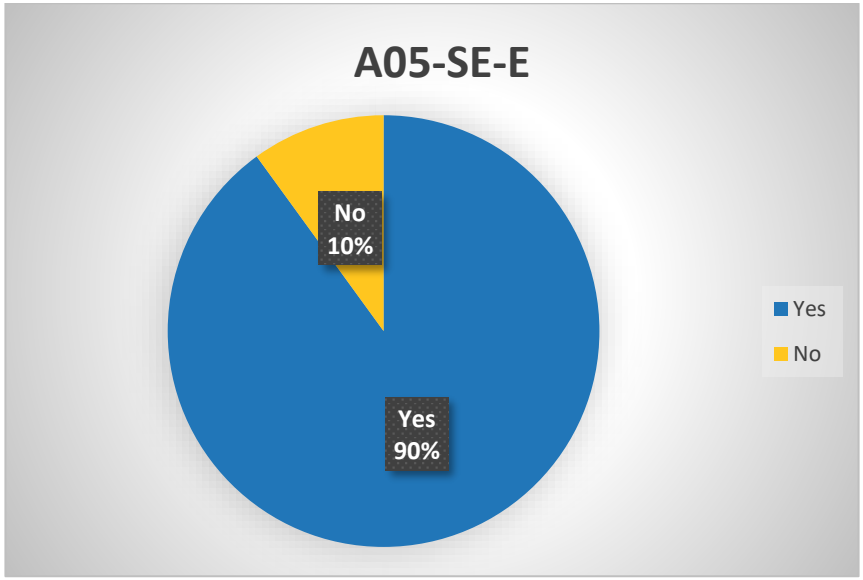

Figure 34: Option A05-SE-E **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary and Marshes SPA and Ramsar, Medway Estuary and Marshes SPA and Ramsar. The Swale SPA and Ramsar site, Outer Thames Estuary SPA, Thanet Coast SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential LSA **agree and we have amended our assessment of DP4.**

Full Design Principle Assessment

A05-SE-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.	No initial safety concerns.	
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.	Less track miles than today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Shorter more expeditious route.	
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.	No new controlled airspace required.	
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.	No increase in complexity anticipated.	
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 London Southend departure options 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.	

Table 26: Option A05-SE-E DP Assessment

9.6. Option **A05-SE-F**

Survey Question

'ARRIVALS Runway 05 - South and East

Do you think we have correctly applied the Design Principles to swathe **A05-SE-F**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

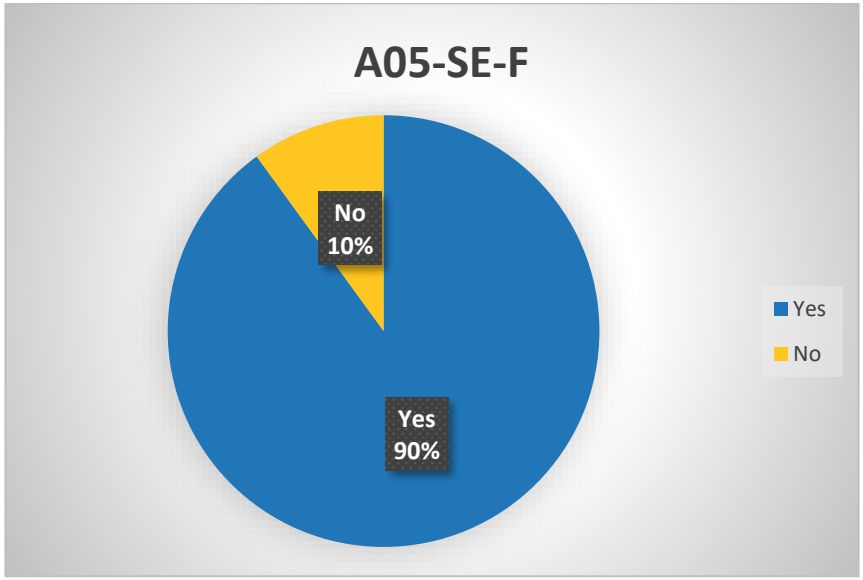

Figure 35: Option A05-SE-F **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'No; 3,4,5 – Flight path is over Benfleet and Southend Marshes SPA and Ramsar site, Thames Estuary & Marshes SPA and Ramsar, Medway Estuary and Marshes SPA and Ramsar, Outer Thames Estuary SPA which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A05-SE-F	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.	No initial safety concerns.	
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.	No new controlled airspace required.	
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.	No increase in complexity anticipated.	
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.	

Table 27: Option A05-SE-F DP Assessment

9.7. Option **A05-SE-G**

Survey Question

'ARRIVALS Runway 05 - South and East

Do you think we have correctly applied the Design Principles to swathe **A05-SE-G**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

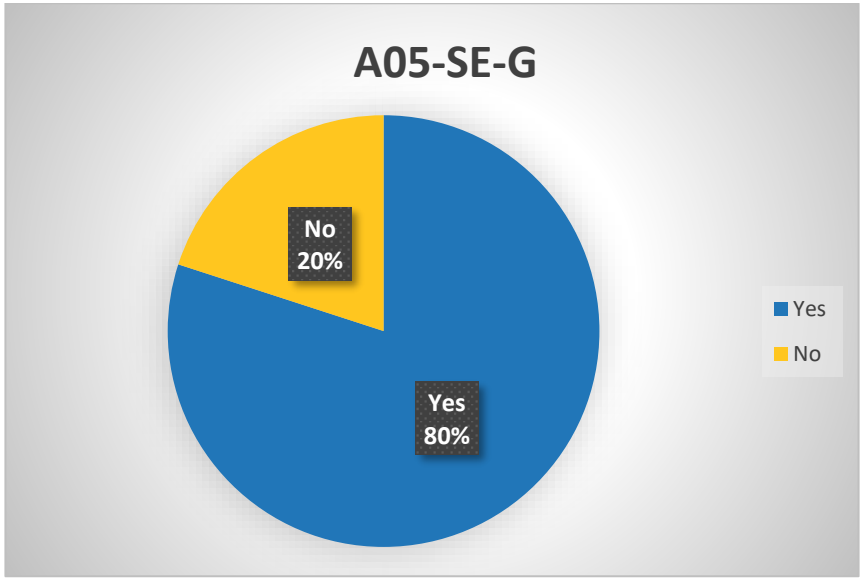

Figure 36: Option A05-SE-G **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'No; Very convoluted to fly and takes the aircraft into areas of training.'

Further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks commensurate with controlled airspace containment.

'No; 3,4,5 – Flight path is over Crouch and Roach Estuaries SPA and Ramsar, and Dengie SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A05-SE-G	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.	No initial safety concerns.	
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.	Currently today's baseline 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.	Currently today's baseline 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.	Potential for significant impacts on the interest features of Crouch and Roach Estuaries SPA and Ramsar and Dengie SPA and Ramsar including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. This has been assessed as amber since there may be an increase in disturbance depending on where the final route may lay within this option.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Currently today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Currently 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.	Currently today's baseline operation.	
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.	Currently today's baseline operation.	
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-B, D05-NE-A and D05-NE-B.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Currently today's baseline 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.	

Table 28: Option A05-SE-G DP Assessment

10. Arrivals Runway 23 – Northwest

Figure 37: Arrival Options Runway 23 - Northwest

10.1. Option **A23-NW-A**

Survey Question

'ARRIVALS Runway 23 - Northwest

Do you think we have correctly applied the Design Principles to swathe A23-NW-A?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

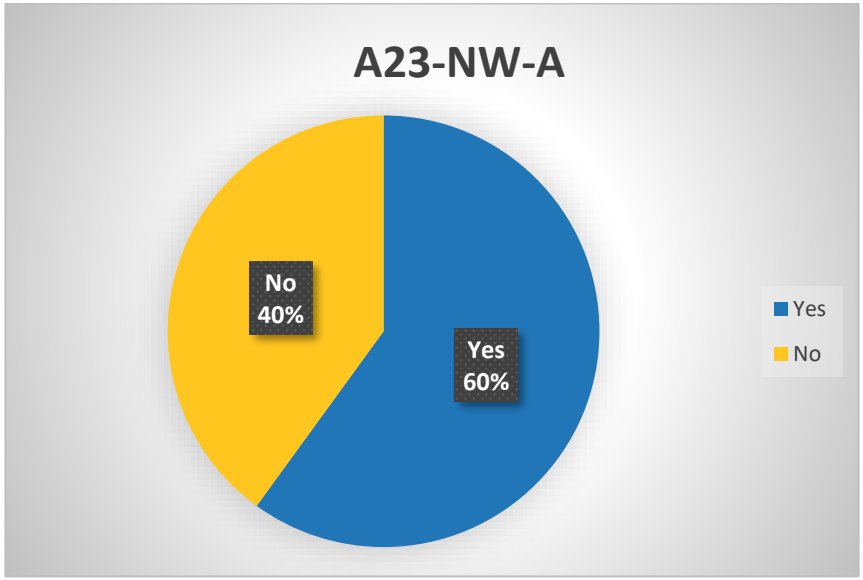

Figure 38: Option A23-NW-A **Survey Response**

Stakeholder feedback with our responses in **BOLD**.

'DP2/DP3 no/very few current arrival tracks further out in this Swathe so potential to increase noise impact.'

LSA agree and we have amended our assessment of DP2 and DP3.

'DP8 & DP10: Would need to be deconflicted from Stansted and London City. Are you looking for dedicated arrival routes for each runway?'

LSA agree and we have amended our assessment of DP10.

'No; DP10 - Systemisation. Potential for interactions with both current and future STN Departures to the East. Depending on the altitude in the vicinity of Braintree, level restrictions or ATC intervention may be required to ensure separation. There is also potential interaction with future STN Arrivals depending on position and type of the agreed holding facility with NERL. DP 12 - AMS Realisation - Potential for multiple interactions with STN Departures to East particularly from runway 22 at STN'

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Crouch and Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A23-NW-A	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.	No initial safety concerns.	
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.	Very few existing arrival tracks in this area so likely increase to 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.	Very few existing arrival tracks in this area so likely increase to noise footprint.	
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.	Crouch and Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC could see an increase in overflights.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	No different to today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	No different 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.	No different to today's baseline operation.	
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.	No different to today's baseline operation.	
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.	Would need to be deconflicted from London Stansted and London City traffic. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	No different to today's baseline 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.	

Table 29: Option A23-NW-A DP Assessment

10.2. Option **A23-NW-B**

Survey Question

'ARRIVALS Runway 23 - Northwest

Do you think we have correctly applied the Design Principles to swathe **A23-NW-B**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

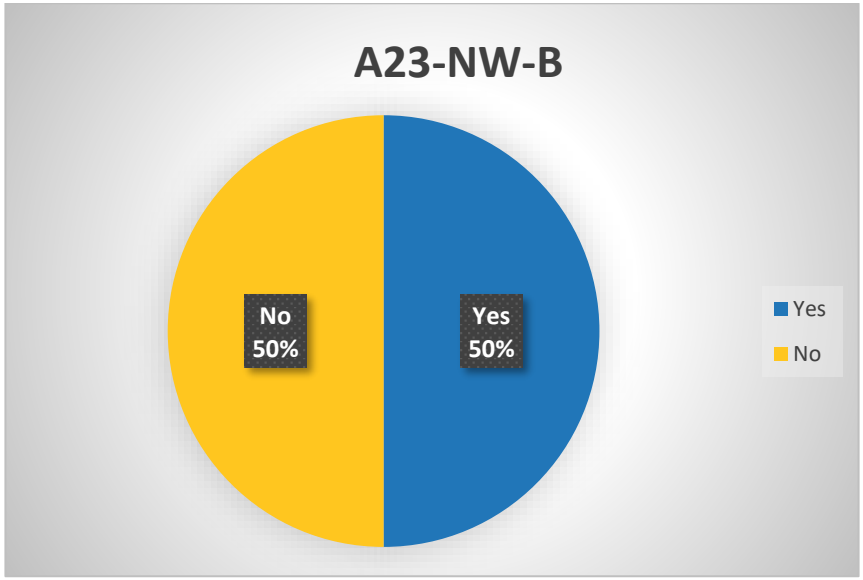

Figure 39: Option A23-NW-B **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'Principle 4-Would there be some impact on the Dengie peninsula so should this be yellow?'

LSA agree and we have amended our assessment of DP4.

'DP2/DP3 no/very few current arrival tracks further out in this swathe so potential to increase noise impact.'

LSA agree and we have amended our assessment of DP2 and DP3.

'DP8 & DP10: Would need to be deconflicted from Stansted and London City. Are you looking for dedicated arrival routes for each runway?'

LSA agree and we have amended our assessment of DP10.

'No; DP10 - Systemisation. Potential for interactions with both current and future STN Departures to the East. Depending on the altitude in the vicinity of Braintree, level restrictions or ATC intervention may be required to ensure separation. There is also potential interaction with future STN Arrivals depending on position and type of the agreed holding facility with NERL. DP 12 - AMS Realisation - Potential for multiple interactions with STN Departures to East particularly from runway 22 at STN'.

LSA agree and we have amended our assessment of DP10.

'No; 3,4,5 – Flight path is over Crouch and Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A23-NW-B	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.	No initial safety concerns.	
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.	Very few existing arrival tracks in this area so likely increase to 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.	Very few existing arrival tracks in this area so likely increase to noise footprint.	
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.	Crouch and Roach Estuaries SPA and Ramsar site, Blackwater Estuary SPA and Ramsar, Essex Estuaries SAC and the Dengie peninsula could see a potential increase in overflights.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	No different to today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	No different 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.	No different to today's baseline operation.	
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.	No different to today's baseline operation.	
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.	Would need to be deconflicted from London Stansted and London City traffic. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	No different to today's baseline 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.	

Table 30: Option A23-NW-B DP Assessment

11. Arrivals Runway 23 – South & East

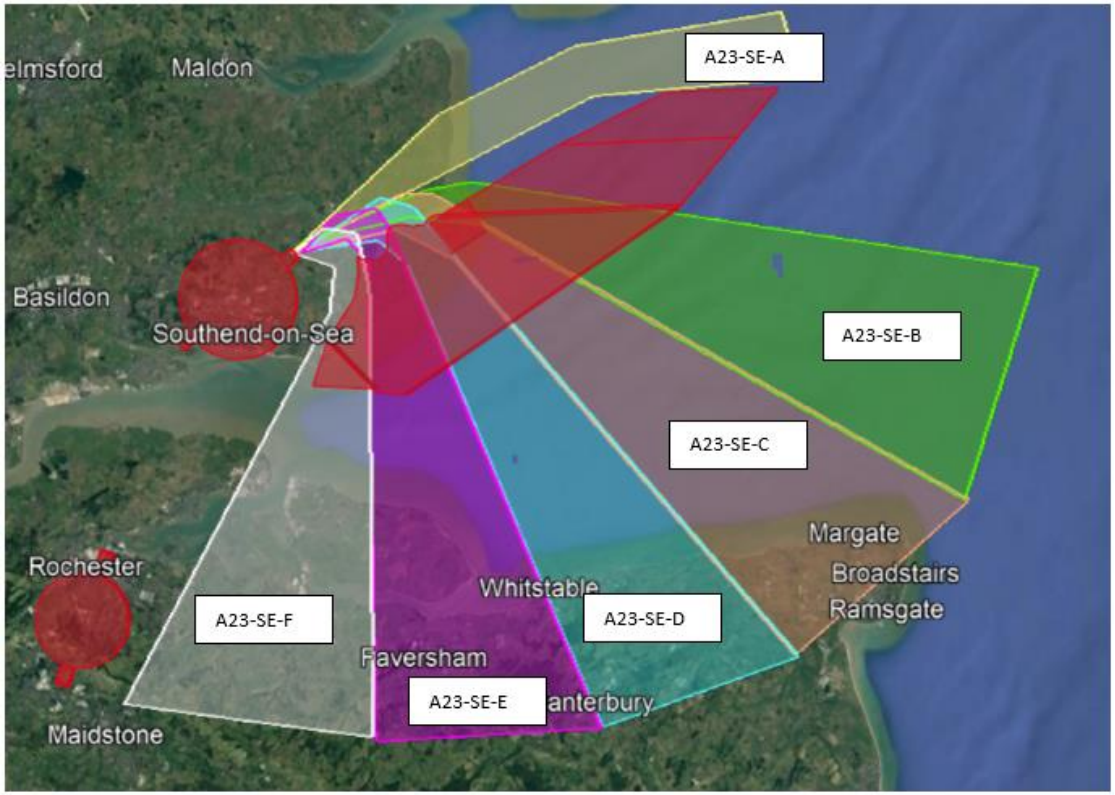

Figure 40: Arrival Options Runway 23 - South & East

11.1. Option **A23-SE-A**

Survey Question

'ARRIVALS Runway 23 - South and East

Do you think we have correctly applied the Design Principles to swathe **A23-SE-A**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

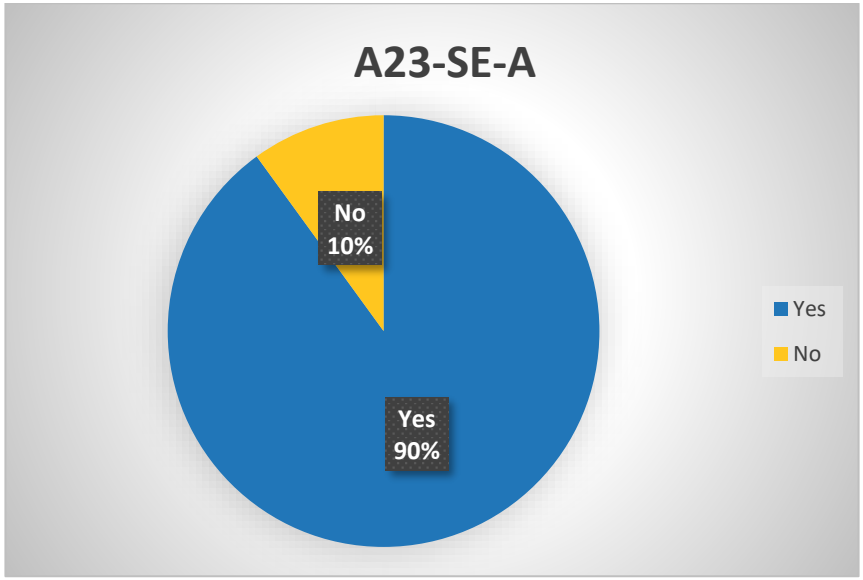

Figure 41: Option A23-SE-A **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'No; 3,4,5 – Flight path is over Crouch & Roach Estuaries SPA and Ramsar site, Dengie SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A23-SE-A	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.	No initial safety concerns.	
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.	Currently today's baseline 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.	Currently today's baseline 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.	Crouch and Roach Estuaries SPA and Ramsar site, Dengie SPA and Ramsar could see an increase depending on where the final track may lay.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Currently today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Currently 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.	Currently today's baseline operation.	
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.	Currently today's baseline operation.	
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.	Currently today's baseline operation.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Currently today's baseline 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.	

Table 31: Option A23-SE-A DP Assessment

11.2. Option **A23-SE-B**

Survey Question

'ARRIVALS Runway 23 - South and East

Do you think we have correctly applied the Design Principles to swathe **A23-SE-B**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

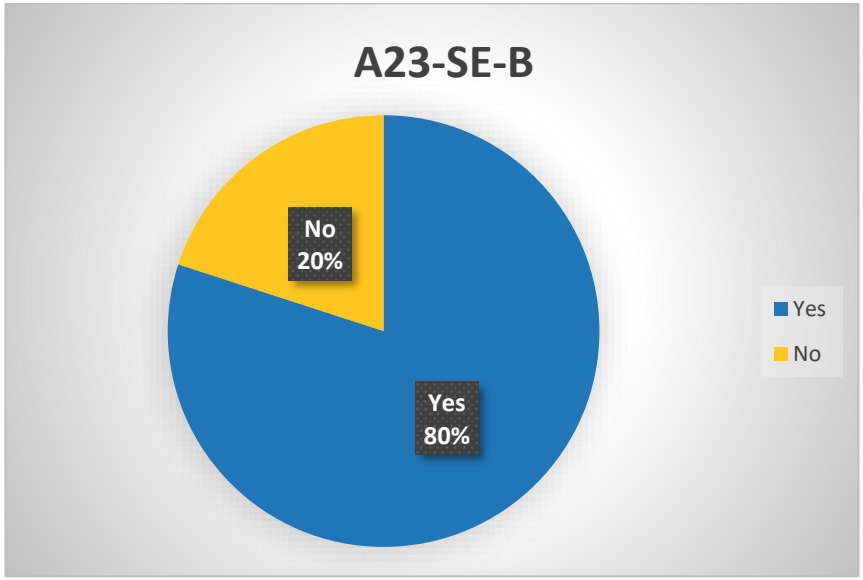

Figure 42: Option A23-SE-B **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'No; DP1 & DP6: Swathe C completely overlapping the DA which is frequently active and will limit availability'

LSA agree and we have amended our assessment of DP1 and DP6.

'No; 3,4,5 – Flight path is over Crouch & Roach Estuaries SPA and Ramsar site, Dengie SPA and Ramsar, Foulness SPA and Ramsar site, Outer Thames Estuary SPA which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A23-SE-B	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 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 on current number of 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 increase on current number of 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.	Crouch and Roach Estuaries SPA, Dengie SPA, Foulness SPA and Ramsar site, Outer Thames Estuary SPA could see a potential increase in overflights.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Extra track miles if arriving from the South.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Swathe C completely overlapping the DA which is frequently active and will limit availability.	
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.	No new controlled airspace would be required.	
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.	No increase in complexity from today's operation.	
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.	No systemisation issues anticipated.	
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.	

Table 32: Option A23-SE-B DP Assessment

11.3. Option **A23-SE-C**

Survey Question

'ARRIVALS Runway 23 - South and East

Do you think we have correctly applied the Design Principles to swathe A23-SE-C?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

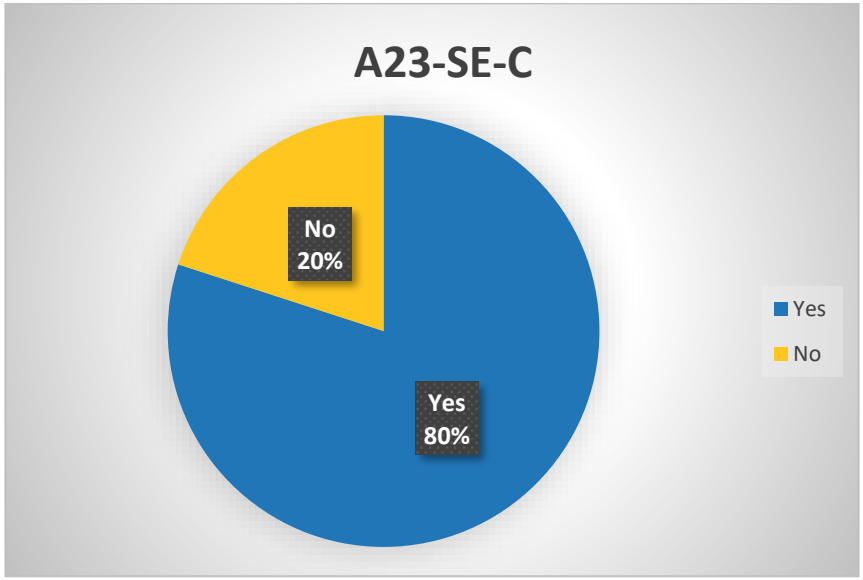

Figure 43: Option A23-SE-C **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'No; DP1 & DP6: Swathe C completely overlapping the DA which is frequently active and will limit availability.'

LSA agree and we have amended our assessment of DP1 and DP6.

'No; 3,4,5 – Flight path is over Crouch & Roach Estuaries SPA and Ramsar site, Dengie SPA and Ramsar, Foulness SPA and Ramsar site, Outer Thames Estuary SPA and Thanet Coast SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A23-SE-C	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 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 on current 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 increase on current 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.	Crouch and Roach Estuaries SPA, Dengie SPA, Foulness SPA and Ramsar site, Outer Thames Estuary SPA could see a potential increase in overflights.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Decrease in track miles from today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Swathe C completely overlapping the DA which is frequently active and will limit availability.	
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.	No new controlled airspace would be required.	
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.	No increase in complexity from today's operation.	
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.	No systemisation issues anticipated.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Decrease in track miles from today's baseline 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.	

Table 33: Option A23-SE-C DP Assessment

11.4. Option **A23-SE-D**

Survey Question

'ARRIVALS Runway 23 - South and East

Do you think we have correctly applied the Design Principles to swathe **A23-SE-D**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

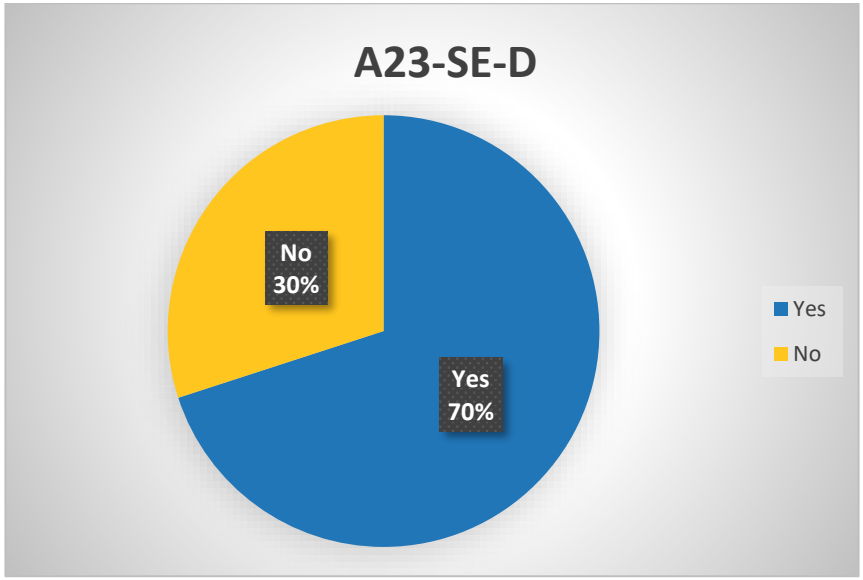

Figure 44: Option A23-SE-D **Survey Response**

Stakeholder feedback with our responses in **BOLD**

'No; Options D, E, and F would result in more concentrated flight paths over the Kent Downs AONB and therefore should, in our view, be assigned an amber rating for DP4.'

LSA agree and we have amended our assessment of DP4.

'No; DP1 & DP6: Swathe D completely overlapping the DA which is frequently active and will limit availability.'

LSAagree and we have amended our assessment of DP1 and DP6.

'No; 3,4,5 – Flight path is over Crouch & Roach Estuaries SPA and Ramsar site, Dengie SPA and Ramsar, Foulness SPA and Ramsar site, Outer Thames Estuary SPA, Stodmarsh SPA and Ramsar site and Thanet Coast SPA and Ramsar site which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants.'

LSA agree and we have amended our assessment of DP4.

Full Design Principle Assessment

A23-SE-D	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 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 on current 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 increase on current 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.	More concentrated flight paths over the Kent Downs AONB and Crouch and Roach Estuaries SPA, Dengie SPA, Foulness SPA, Thames Estuary SPA, Stodmarsh SPA and Ramsar site and Thanet Coast SPA.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Decrease in track miles from today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Overlapping the DA which is frequently active and will limit availability.	
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.	No new controlled airspace would be required.	
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.	No increase in complexity from today's operation.	
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.	No systemisation issues anticipated.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Decrease in track miles from today's baseline 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.	

Table 34: Option A23-SE-D DP Assessment

11.5. Option **A23-SE-E**

Survey Question

'ARRIVALS Runway 23 - South and East

Do you think we have correctly applied the Design Principles to swathe **A23-SE-E?**

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

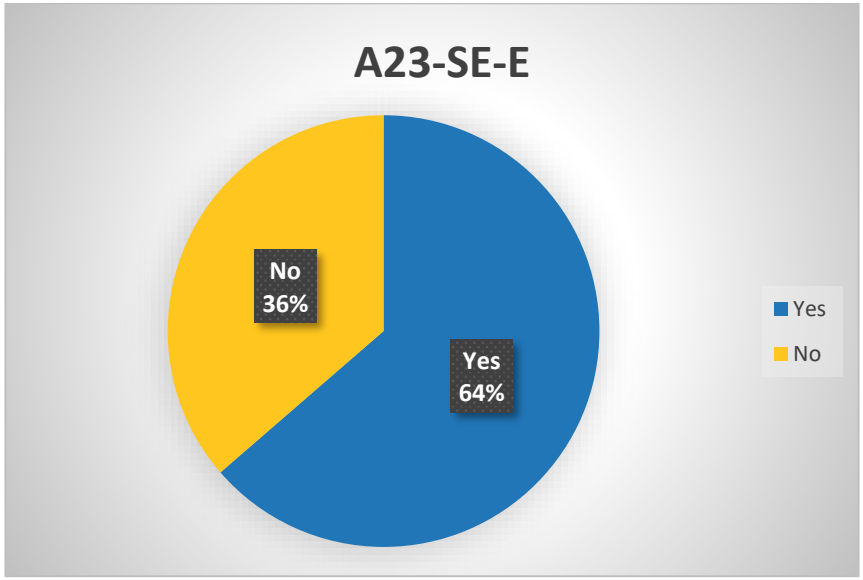

Figure 45: Option A23-SE-E **Survey Response**

Stakeholder feedback with our responses in **BOLD.**

'Options D, E, and F would result in more concentrated flight paths over the Kent Downs AONB and therefore should, in our view, be assigned an Amber rating for DP4.'

LSA agree and we have amended our assessment of DP4.

'No; DP1 & DP6: Conflicts with LTMA departures. Swathe E completely overlapping the DA which is frequently active and will limit availability.'

LSA agree and we have amended our assessment of DP1 and DP6.

'No; 3,4,5 – Flight path is over Crouch & Roach Estuaries SPA and Ramsar site, Dengie SPA and Ramsar, Foulness SPA and Ramsar site, Outer Thames Estuary SPA, The Swale SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB may also be impacted.'

LSA agree and we have amended our assessment of DP4.

'Arrivals 23 via e and f over the built-up areas and flying level isn't a good plan, re design these to avoid the built-up areas isn't difficult.'

Should this option be progressed further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

A23-SE-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 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 on current 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 increase on current 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.	More concentrated flight paths over the Kent Downs AONB and Crouch & Roach Estuaries SPA, Dengie SPA, Foulness SPA, Thames Estuary SPA, Stodmarsh SPA and Ramsar site and Thanet Coast SPA.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Decrease in track miles from today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Overlapping the DA which is frequently active and will limit availability.	
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.	No new controlled airspace would be required.	
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.	No increase in complexity from today's operation.	
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 swathe D23-S-A. Conflicts with LTMA departures. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Decrease in track miles from today's baseline 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.	

Table 35: Option A23-SE-E DP Assessment

11.6. Option **A23-SE-F**

Survey Question

'ARRIVALS Runway 23 - South and East

Do you think we have correctly applied the Design Principles to swathe **A23-SE-F**?

If no, please provide the Design Principle number and reason in the free text 'other' field.'

Response

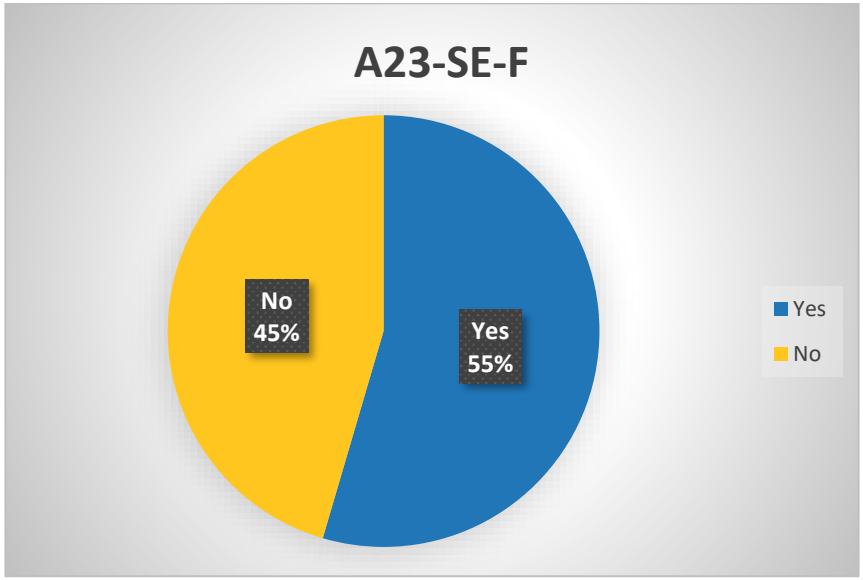

Figure 46: Option A23-SE-F **Survey Response**

Stakeholder feedback with our responses in **BOLD**.

'Options D, E, and F would result in more concentrated flight paths over the Kent Downs AONB and therefore should, in our view, be assigned an amber rating for DP4.'

LSA agree and we have amended our assessment of DP4.

'No; A variant of F is to go closer to the EGMC ATC, to maybe Southend Pier and then fly 055 before hooking left into 23. Keeps you further away from the DA.'

Should this option be progressed, this comment will be addressed and considered later in the ACP process when we reduce our options and refine the swathes to more concise routes. We will then consider and evaluate climb gradients and accurate tracks.

'No; DP1 & DP6: Conflicts with LTMA departures. Swathe F completely overlapping the DA which is frequently active and will limit availability'

We acknowledge the feedback and have subsequently amended our assessment of DP1 and DP6.

'No; 3,4,5 – Flight path is over Crouch & Roach Estuaries SPA and Ramsar site, Dengie SPA and Ramsar, Foulness SPA and Ramsar site, Outer Thames Estuary SPA, The Swale SPA and Ramsar, Medway Estuary & Marshes SPA and Ramsar which could have significant impacts on the interest features of these sites including disturbance from low flight altitudes and increased noise, bird strikes, as well as the potential for additional emissions and pollutants. Tranquillity of the Kent Downs AONB may also be impacted.'

LSA agree and we have amended our assessment of DP4.

'Arrivals 23 via e and f over the built-up areas and flying level isn't a good plan, re design these to avoid the built-up areas isn't difficult.'

Should this option be progressed further in the ACP process, when we reduce our options and refine the swathes to more concise routes, we will consider and evaluate climb gradients and accurate tracks.

Full Design Principle Assessment

A23-SE-F	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 majority of the swathe routes through the Shoeburyness DA. This option could be used as a potential respite route for when the DA are inactive, or a potential route missing the DA confines, subject to PBN requirements.	
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 on current number of 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 increase on current number of 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.	More concentrated flight paths over the Kent Downs AONB and Crouch and Roach Estuaries SPA, Dengie SPA, Foulness SPA, Thames Estuary SPA, Stodmarsh SPA and Ramsar site and Thanet Coast SPA.	
5	**Emissions and Air Quality** – The proposed design should minimise CO2 emissions per flight.	Decrease in track miles from today's baseline operation.	
6	**Operational Requirements** – The new procedures should address the needs of most operators at LSA.	Overlapping the DA which is frequently active and will limit availability.	
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.	No new controlled airspace would be required.	
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.	No increase in complexity from today's operation.	
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 swathe D23-S-A. Conflicts with LTMA departures and close proximity to Gatwick. Potential conflicts, with other airports, to be discussed during future bilateral sessions should this option be carried forward.	
11	**Operational Cost** – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	Decrease in track miles from today's baseline 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.	

Table 36: Option A23-SE-F DP Assessment

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