FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals Baseline

Description

Aircraft arriving at Gatwick Airport are tactically controlled (vectored) by ATC onto final approach. There are no defined routes to follow and aircraft are provided with instructions from Air Traffic Control who ensure the aircraft are safely spaced whilst being directed to land at Gatwick. The majority of aircraft use the Instrument Landing System (ILS) to land at Gatwick although RNP and LOC/DME approaches are also available.

For more information, please see Gatwick's Stage 2A document

Noise

This option is located outside of the main swathe of concentration within the baseline however the overflight contour is partially located over some areas which are overflown on an infrequent basis. A single PBN arrival transition has the potential to create significant concentration. This will be dependent on the level of vectoring also required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

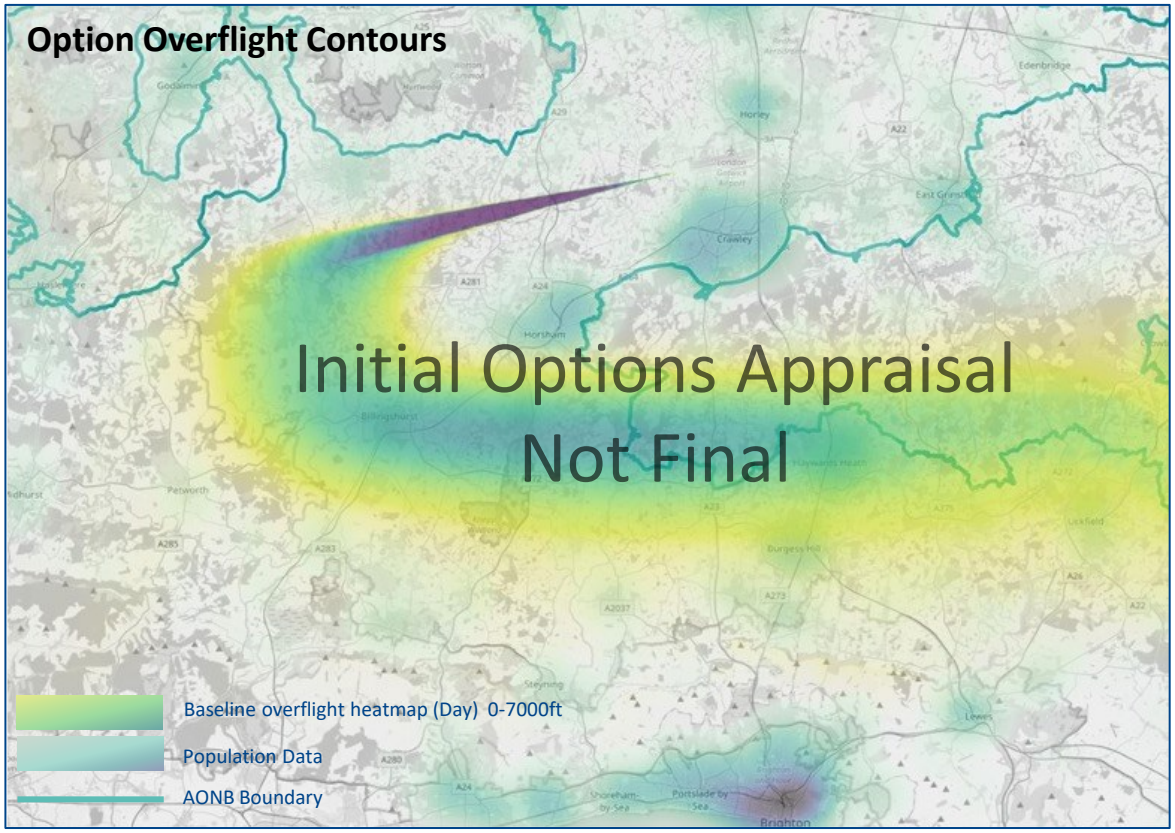
Airspace Modernisation Strategy

Doing nothing with Gatwick's arrivals will constrain options for Gatwick's SIDs and the wider LTMA network design. No change to arrivals at Gatwick will inhibit AMS benefits associated with the wider programme.

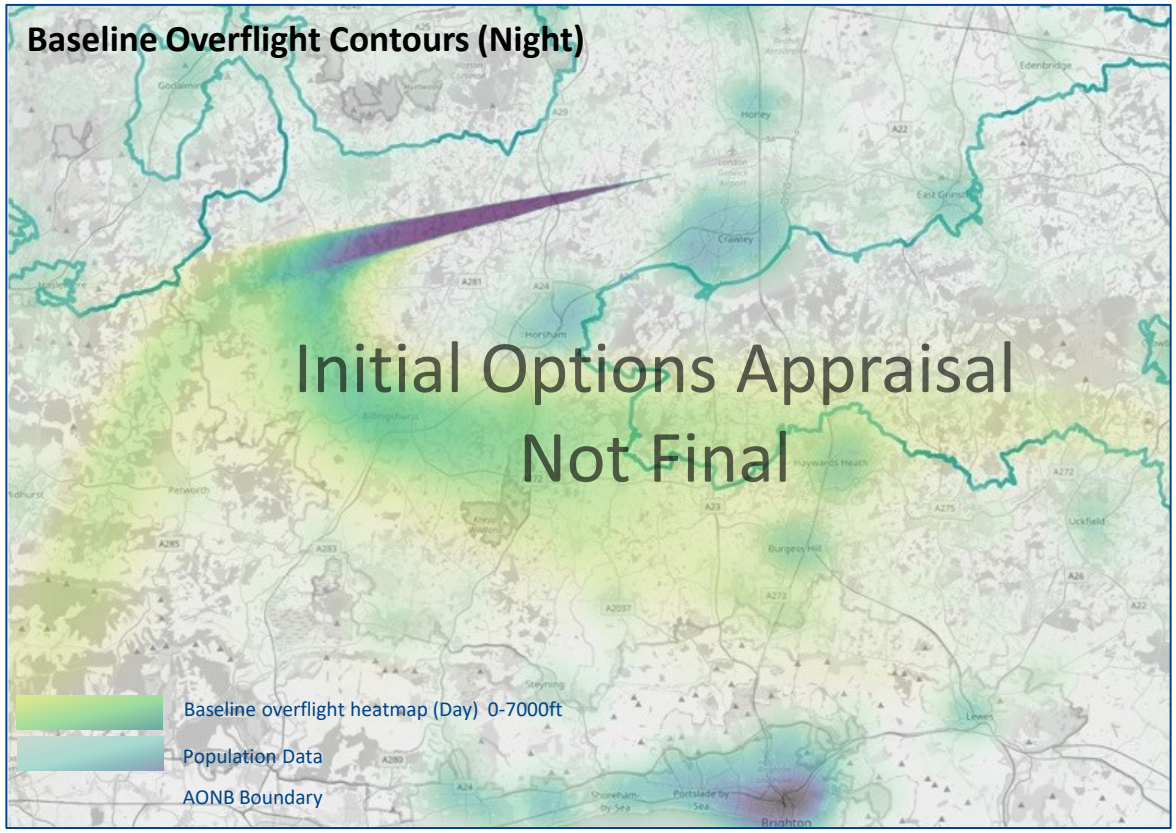
Safety

At the current traffic levels there are no safety concerns however future traffic growth could lead to increased complexity and workload for ATC and Pilots. This could lead to traffic levels within the LTMA being capped or increased ground holding, in order to maintain safety.

Overflight Illustration



Overflight Illustration



LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals Baseline

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	390	n/a
LOAEL (Night)	173	n/a
N65 (20)	799	n/a
N60 (5)	2798	n/a

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	n/a

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*No change*

Economic	Qualitative Conclusion
Commercial Airlines	*No change*
General Aviation	*No change*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*No change*
GA Access	*No change*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No change*
Commercial Airlines Other	*No change*
Airport / ANSP Infrastructure	*No change*
Airport / ANSP Operational	*No change*
Airport / ANSP Deployment	*n/a*

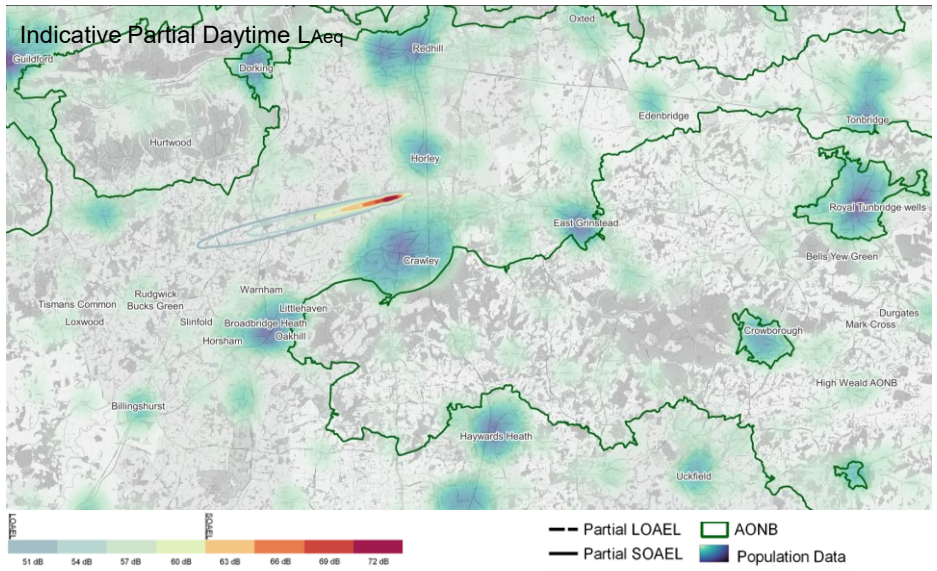
Option Name	Noise			Air Quality	Tranquillity (Overflight area km^2)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
Baseline	226349 / 113504	n/a	n/a	n/a	37.1	1	0.1	n/a
Interdependencies, conflicts & trade-offs								
Some Gatwick arrivals share interdependencies with Heathrow and Farnborough however this mostly occurs above 7000ft within the network airspace.								

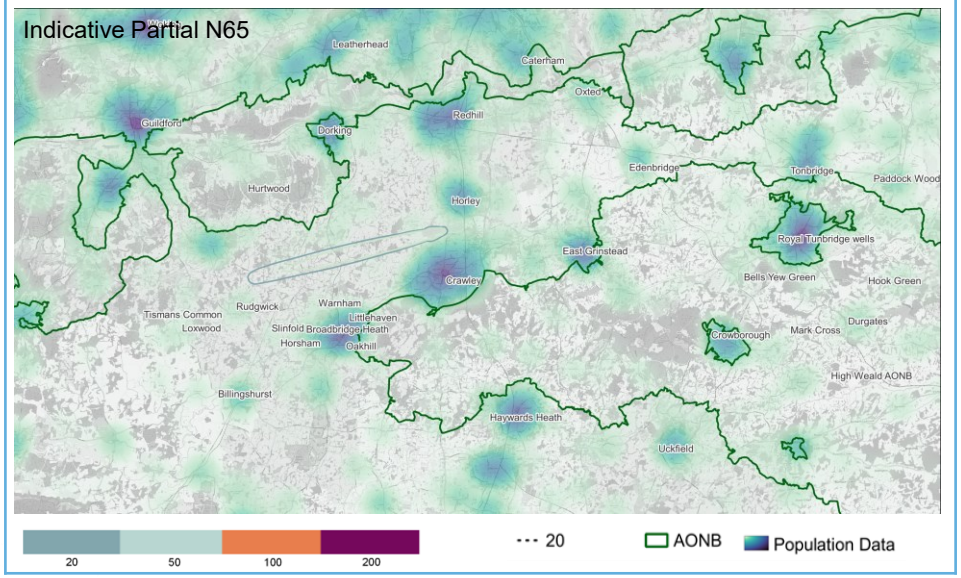
FASI-S ACP Initial Options Appraisal Dashboard

Option

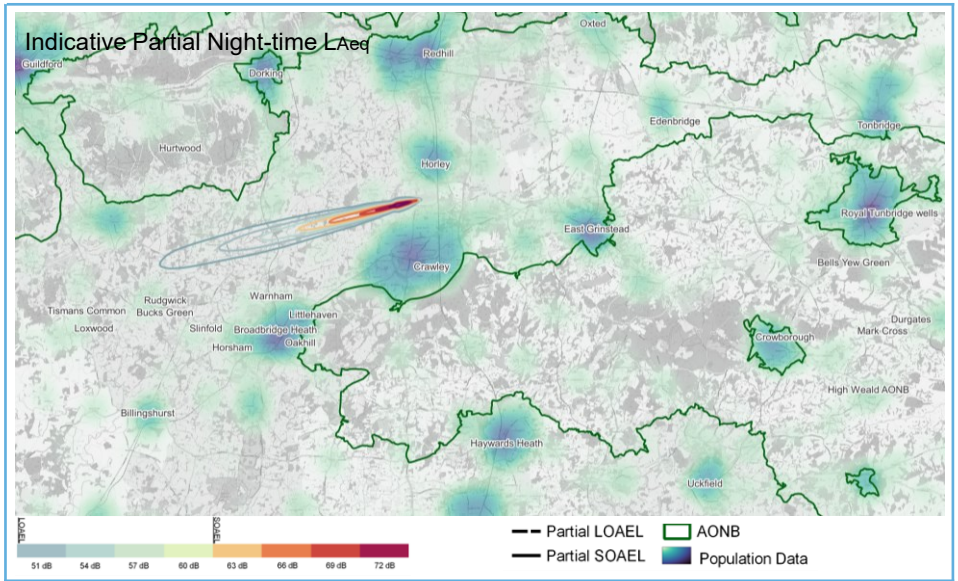
Easterly Arrivals Baseline

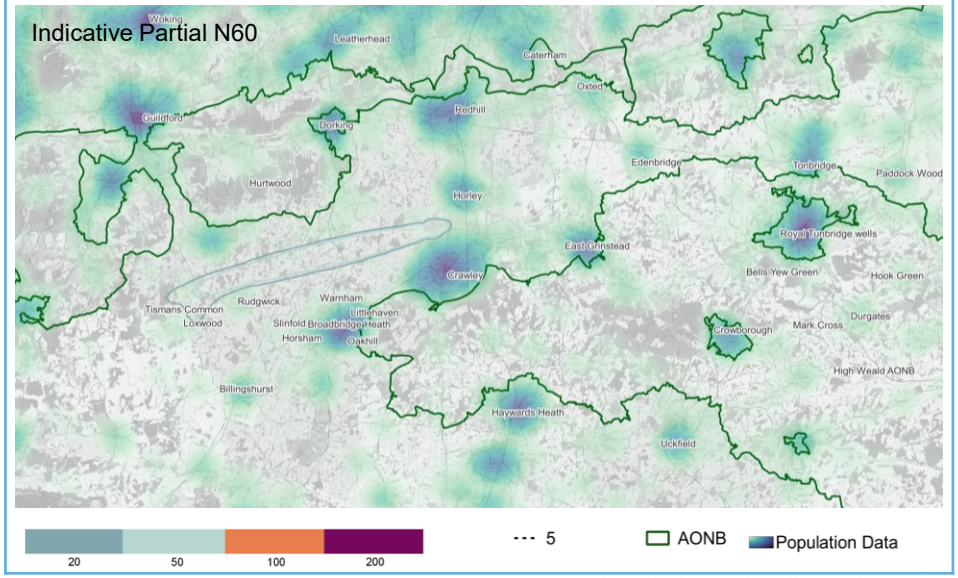
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAA

Description

This PBN arrival option joins the final approach at c.14nm. When developing this option there was a focus on meeting DP3 (limit adverse noise effects) and minimising total population overflown whilst also considering DP1, DP2, DP5, DP7, DP8, DP9 and the AMS.

Noise

This option is located outside of the main swathe of concentration within the baseline however the overflight contour is partially located over some areas which are overflown on an infrequent basis. A single PBN arrival transition has the potential to create significant concentration. This will be dependent on the level of vectoring also required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

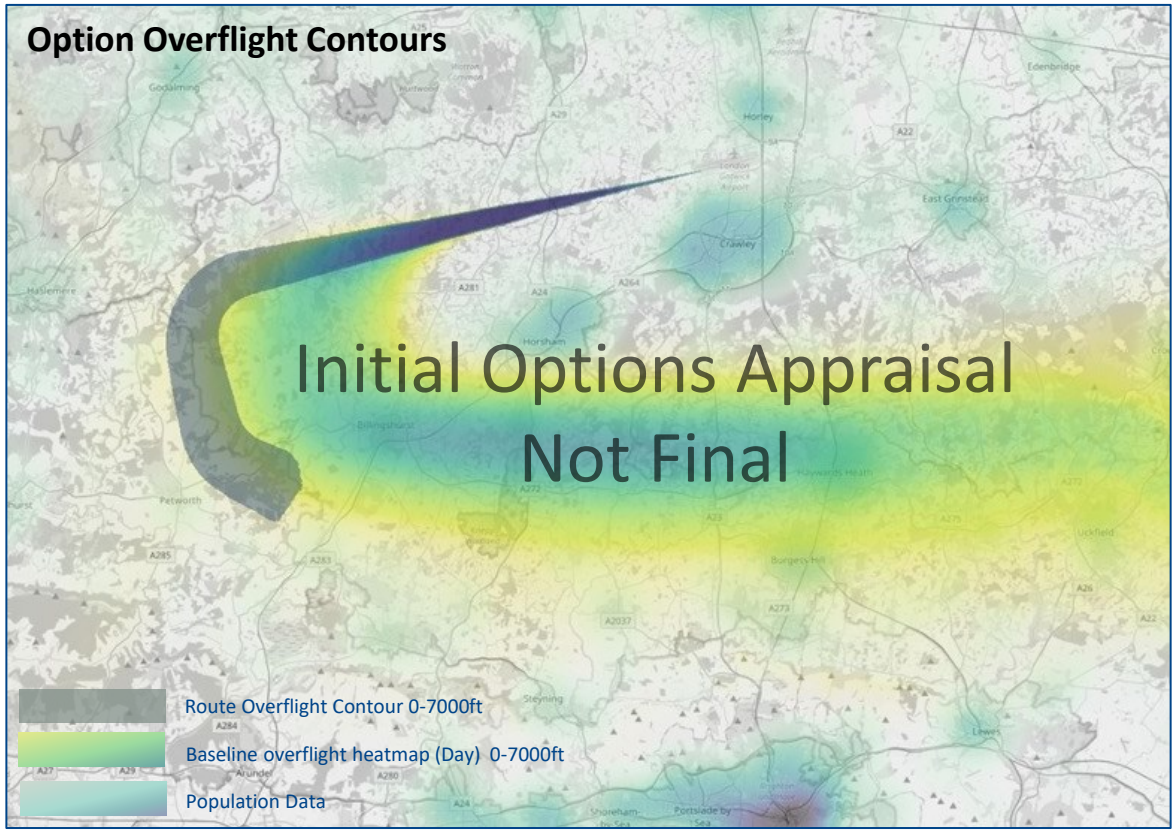
Supports the AMS through the implementation of PBN arrivals which would be for noise mitigation purposes as set out in the Government's Air Navigation Guidance. Environmentally, this option could have impacts in terms of fuel burn and CO2. PBN arrivals are expected to be used in conjunction with an RMA as part of a wider system design which could enable simplification, integration, safety and efficiency enhancements.

Safety

No IFP design issues are anticipated with this option. There is precedent for PBN to ILS procedures in the UK.

No safety concerns with the use of a single PBN approach transition onto final approach, assuming adequate separation from all other routes

Overflight Illustration



LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAA

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	2920	+122

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Impacts identified*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAA

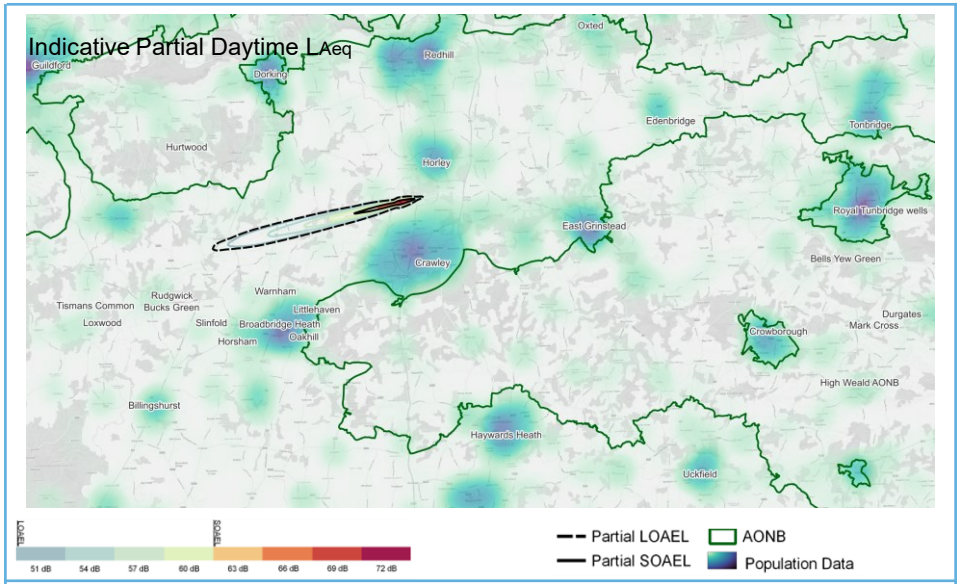
Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAA	2553	47	276	No	0	1	0.1	X No
Interdependencies, conflicts & trade-offs								
Option is highly likely to have significant interactions with Farnborough and Heathrow.								

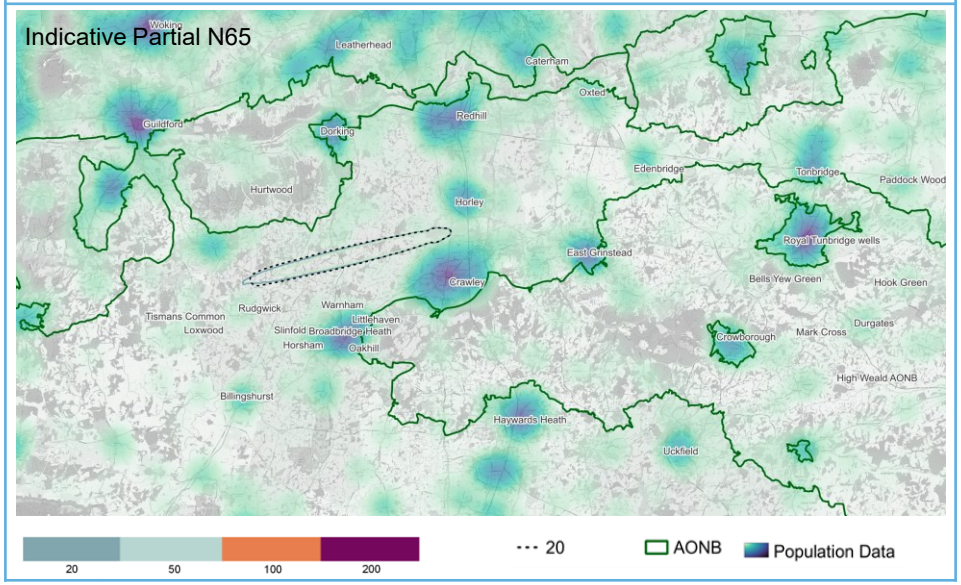
FASI-S ACP Initial Options Appraisal Dashboard

Option

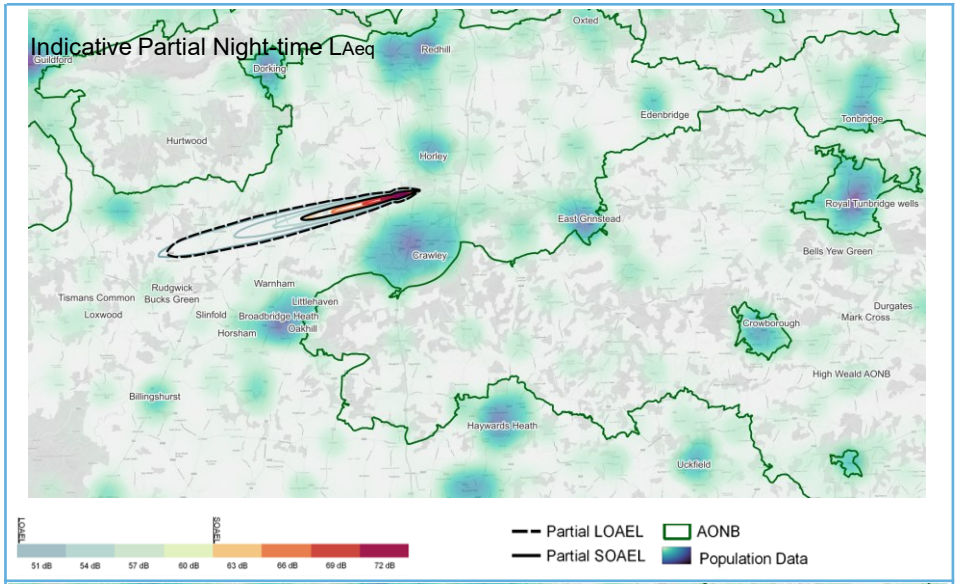
Easterly Arrivals: EAA

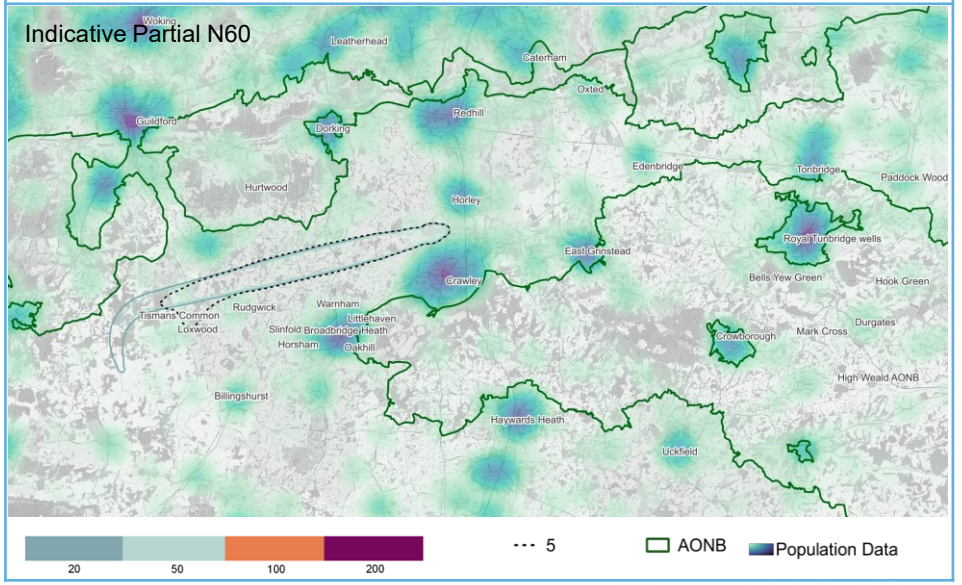
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAC

Description

This arrival option offers a PBN route from the south that joins the final approach at c.9.5nm. When developing this option there was a focus on meeting DP3 (limit adverse noise effects), DP6 (Optimise Use of Aircraft Capabilities) and minimising total population overflown whilst also considering DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS.

Noise

This option offers a lateral change in approach compared to the baseline however large parts of the option remain within the baseline swathe including the turn onto final approach. At night, this option would introduce new overflight compared to the baseline as aircraft would join final approach under 10nm.

Compared to the baseline, a single PBN arrival transition has the potential to create significant concentration. This will be dependent on the level of vectoring also required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

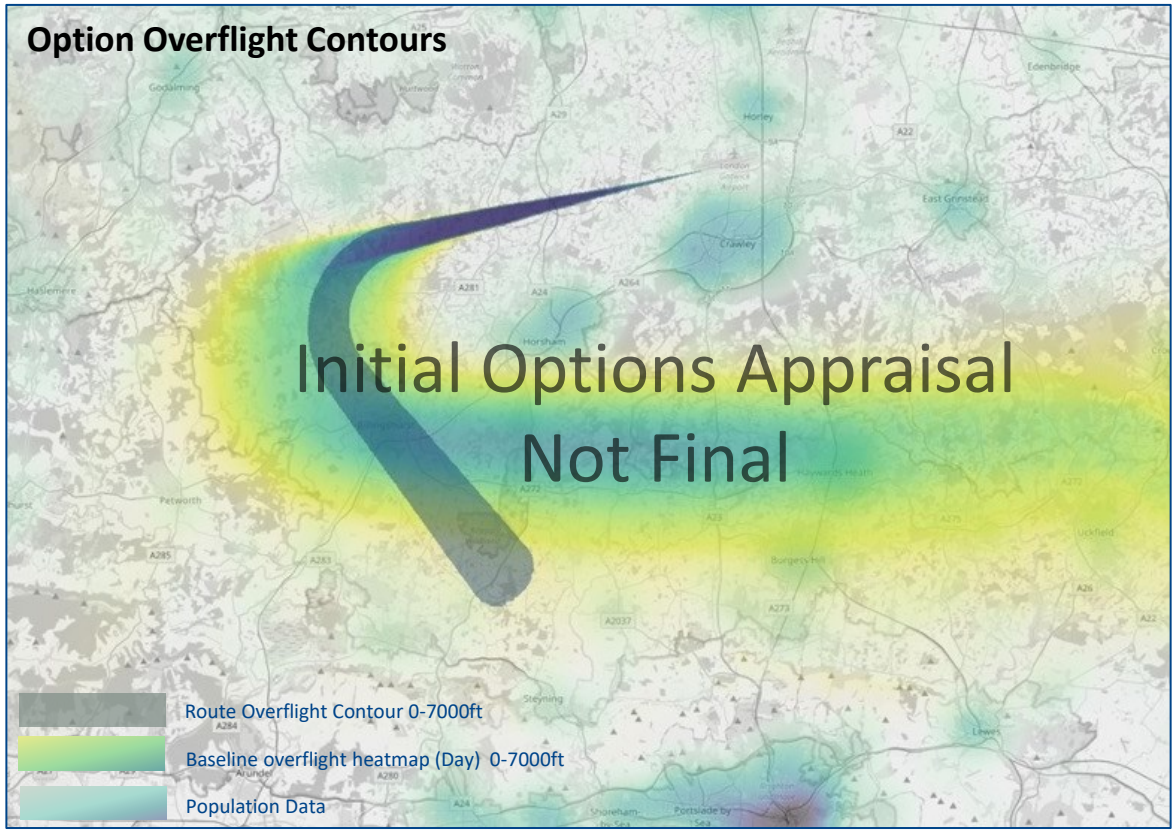
Supports the AMS through the implementation of PBN arrivals which would be for noise and environmental mitigation purposes as set out in the Government's Air Navigation Guidance. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design which could enable simplification, integration, safety and efficiency enhancements.

Safety

No IFP design issues are anticipated with this option. There is precedent for PBN to ILS procedures in the UK.

No safety concerns with the use of a single PBN approach transition onto final approach, assuming adequate separation from all other routes

Overflight Illustration



FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAC

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	7260	+4462

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAC

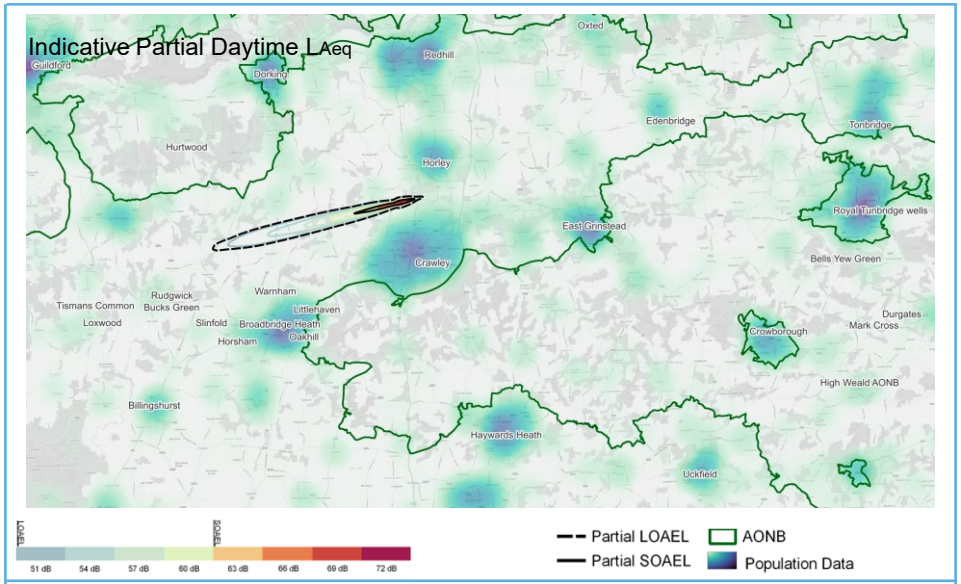
Option Name	Noise			Air Quality	Tranquillity (Overflight area km^2)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAC	10919	36	115	No	0	1	0.1	✓ Yes
Interdependencies, conflicts & trade-offs								
Option has potential interactions with some departure routes however interactions are minimised with those departure routes that have been evolved to reduce interactions with arrivals.								

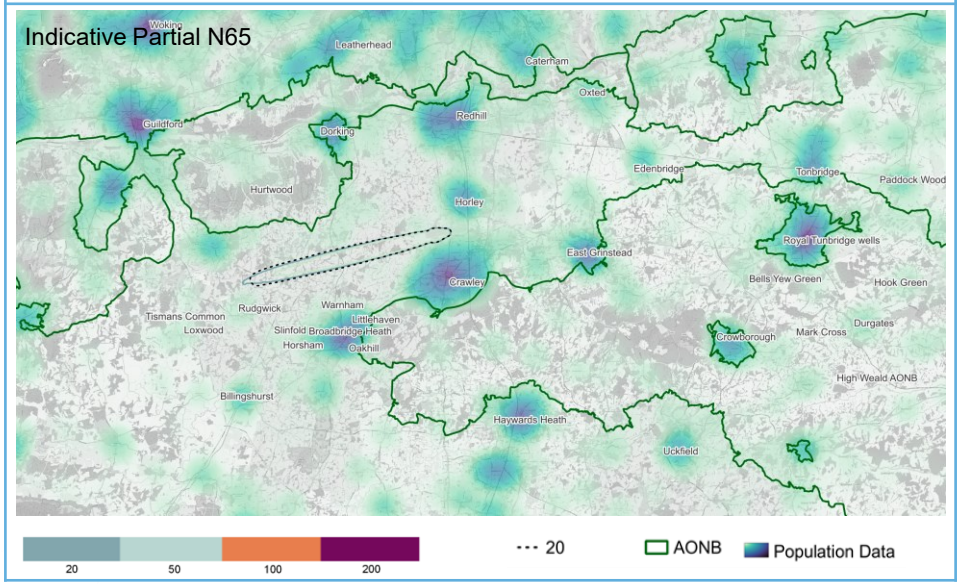
FASI-S ACP Initial Options Appraisal Dashboard

Option

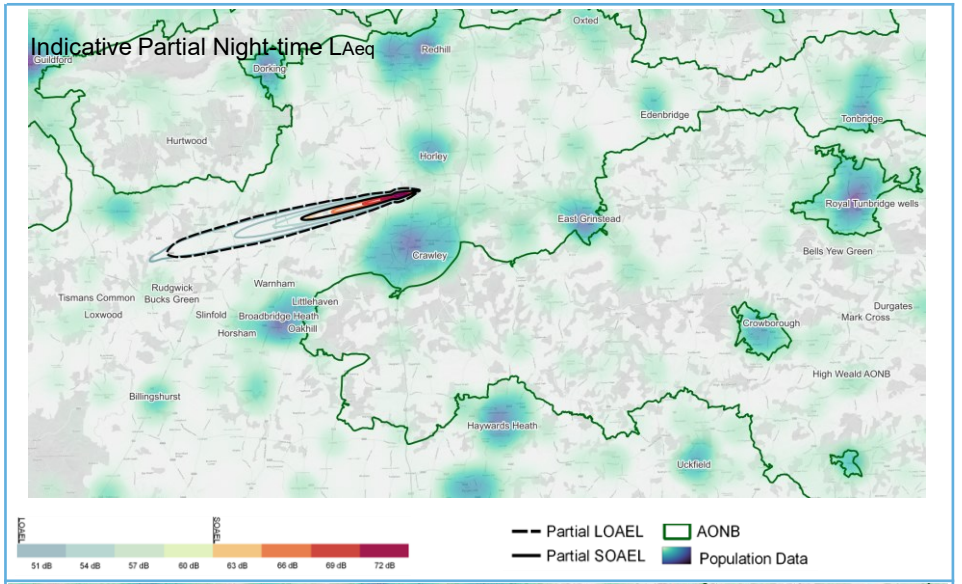
Easterly Arrivals: EAC

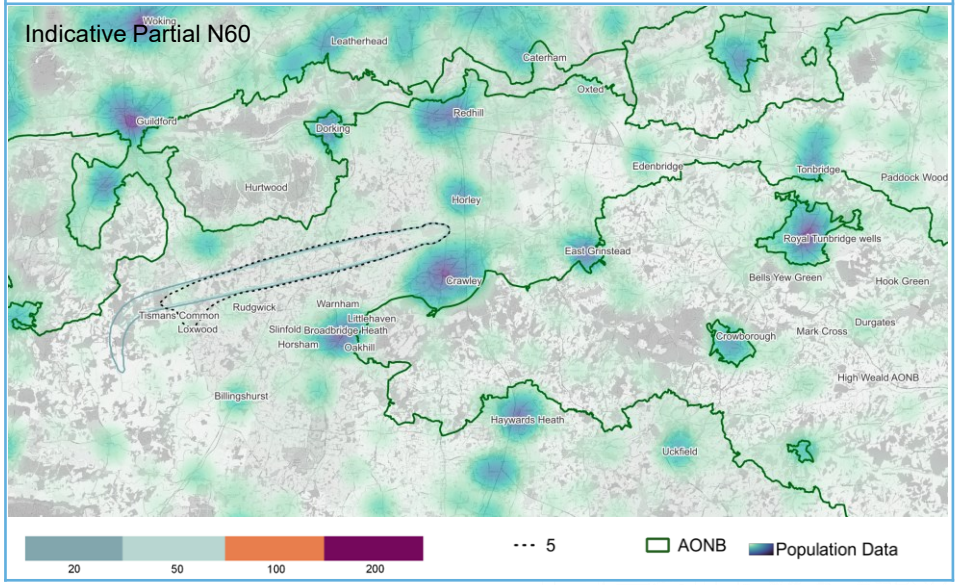
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAD

Description

This option offers four PBN arrivals which could be used in a respite configuration. The routes join the final approach at c.13nm, c.8.5nm, c.7.0nm and c.6.0nm.

When developing this option there was a focus on meeting DP3 (limit adverse noise effects), DP7 (Long term predictability and adaptability) and minimise total population whilst also considering DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS.

Noise

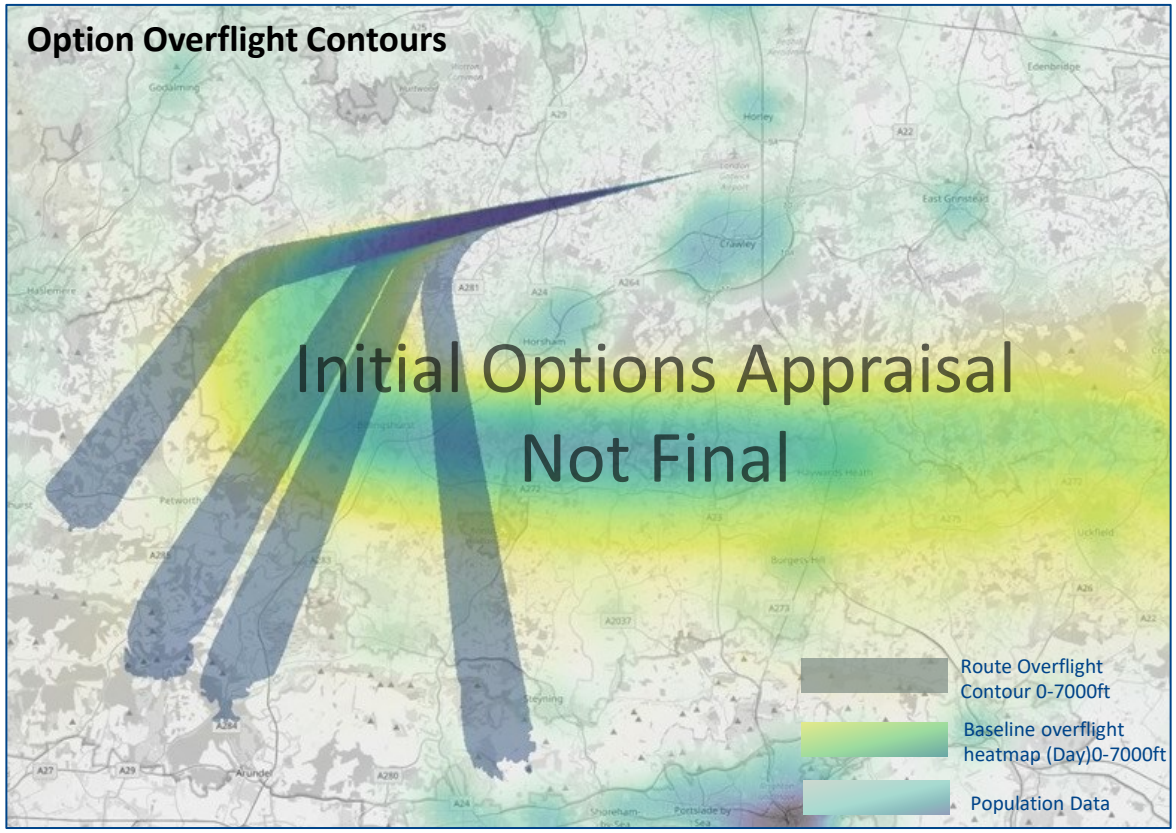
As two of the four routes cannot be operated as a PBN-ILS transition, the frequency they could be used is reduced and therefore noise benefits and respite benefits are unlikely to be realised compared to other options where a PBN-ILS transition is available. This option is outside of the existing airspace arrangements, with routes that join final approach closer than today, creating areas of new overflight compared to the baseline. All four routes offer a lateral change compared to the baseline which is outside of existing arrangements.

Compared to the baseline, PBN arrival transitions have the potential to create significant concentration however this option offers some noise sharing. There may also be dispersal around the routes and this will be dependent on the level of vectoring required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise..

Airspace Modernisation Strategy

Supports the AMS through the implementation of PBN arrivals which would be for noise mitigation purposes as set out in the Government's Air Navigation Guidance. Environmentally, this option could have impacts in terms of fuel burn and CO2. PBN arrivals are expected to be used in conjunction with an RMA as part of a wider system design which could enable simplification, integration, safety and efficiency enhancements.

Overflight Illustration



Safety

This option joins final approach at c.6.5nm and c.7.5nm which raises IFP design issues as a PBN to ILS transition.

The more approaches available. the higher the changes of a safety error by ATC or Pilots. In order to mitigate this risk, additional assurance work would be required with a safety argument generated. This expected to be achievable but would require further investigation as part of Stage 3 activity should this option progress.

LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAD

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	693	-106
N60 (5)	1794	-1004

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Impacts identified*

Economic	Qualitative Conclusion
Commercial Airlines	*Impacts identified*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*Impacts identified*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAD	19604	10333	12458	No	0	1	0.1	X No

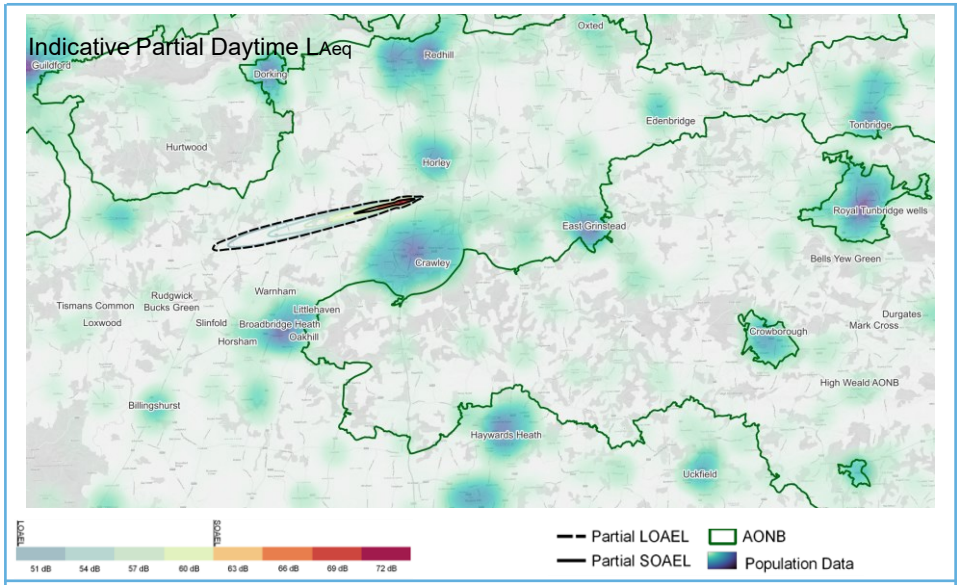
Interdependencies, conflicts & trade-offs
Feedback from NERL has indicated that the two western routes within this option have significant interactions with the flows of Farnborough and Heathrow traffic within the wider airspace and would therefore require evolution. This means that the portion of the routes from 7000- c.4000ft would likely need to be moved laterally, in order to integrate with the wider airspace network. Although some easterly departure routes have been evolved to reduce interactions with arrivals, due to the position of the join onto final approach, further investigation would be required to resolve the interactions of this option with any right turn wrap around easterly departures. Options with shorter final approaches are more likely to have interactions with departures which may require resolution through reduced CCO/CDO performance.

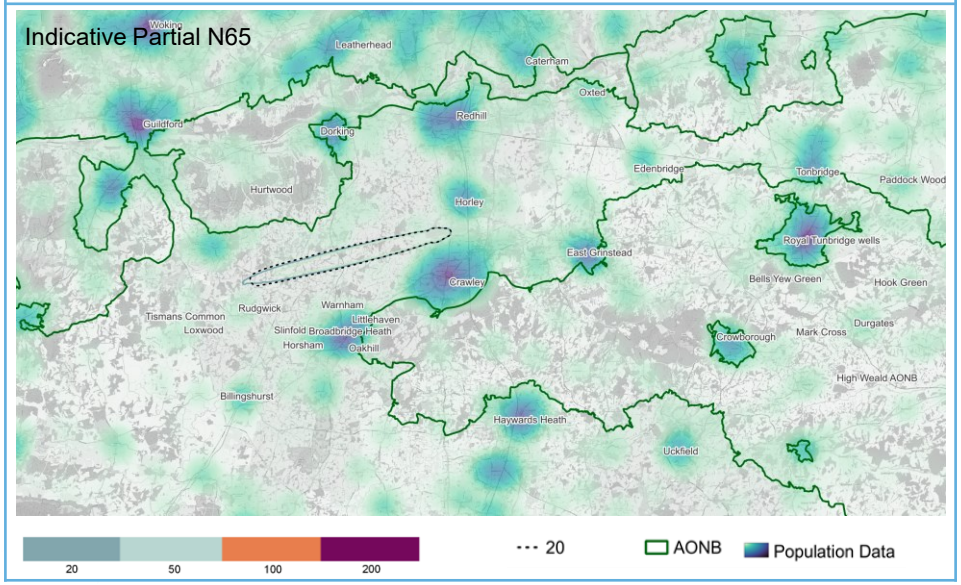
FASI-S ACP Initial Options Appraisal Dashboard

Option

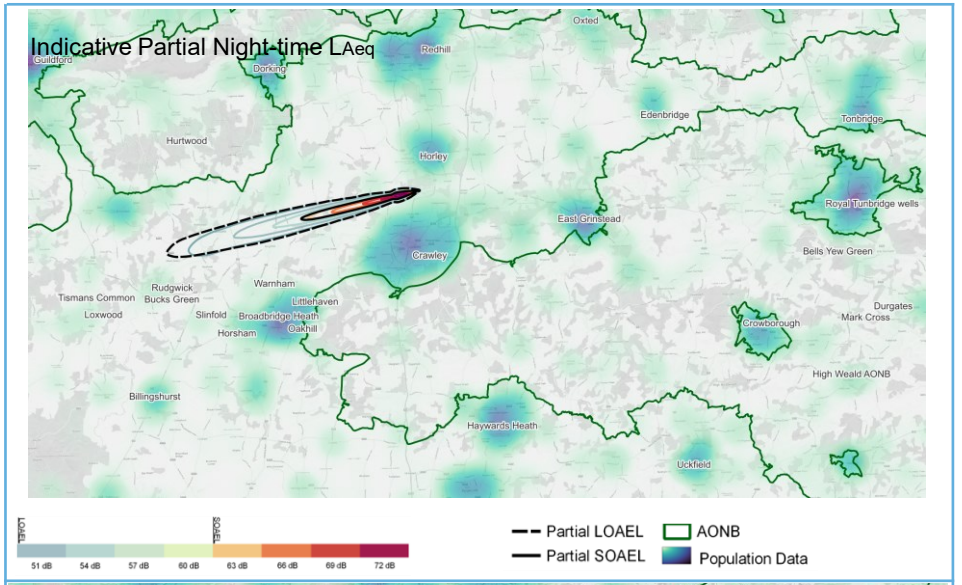
Easterly Arrivals: EAD

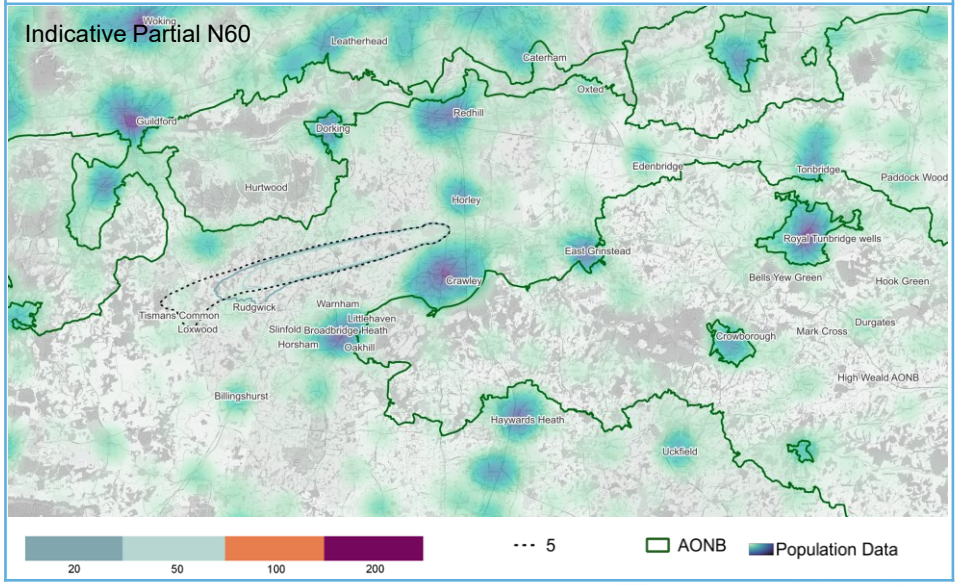
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAE

Description

This option offers three PBN arrivals which could be used in a respite configuration. The routes join the final approach at c.14nm, c.11.5nm and c.8.0nm.

When developing this option there was a focus on meeting DP3 (limit adverse noise effects), DP7 (Long term predictability and adaptability) and minimise total population overflown. As the SEL data sits along the final approach track, the primary metric used to identify the high performing notional flight path is the 'total population overflown' overflight contours. A secondary check of Area of AONB metrics was also undertaken. Alongside the outputs from the Airspace Design Database, this option aimed to meet DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS.

Noise

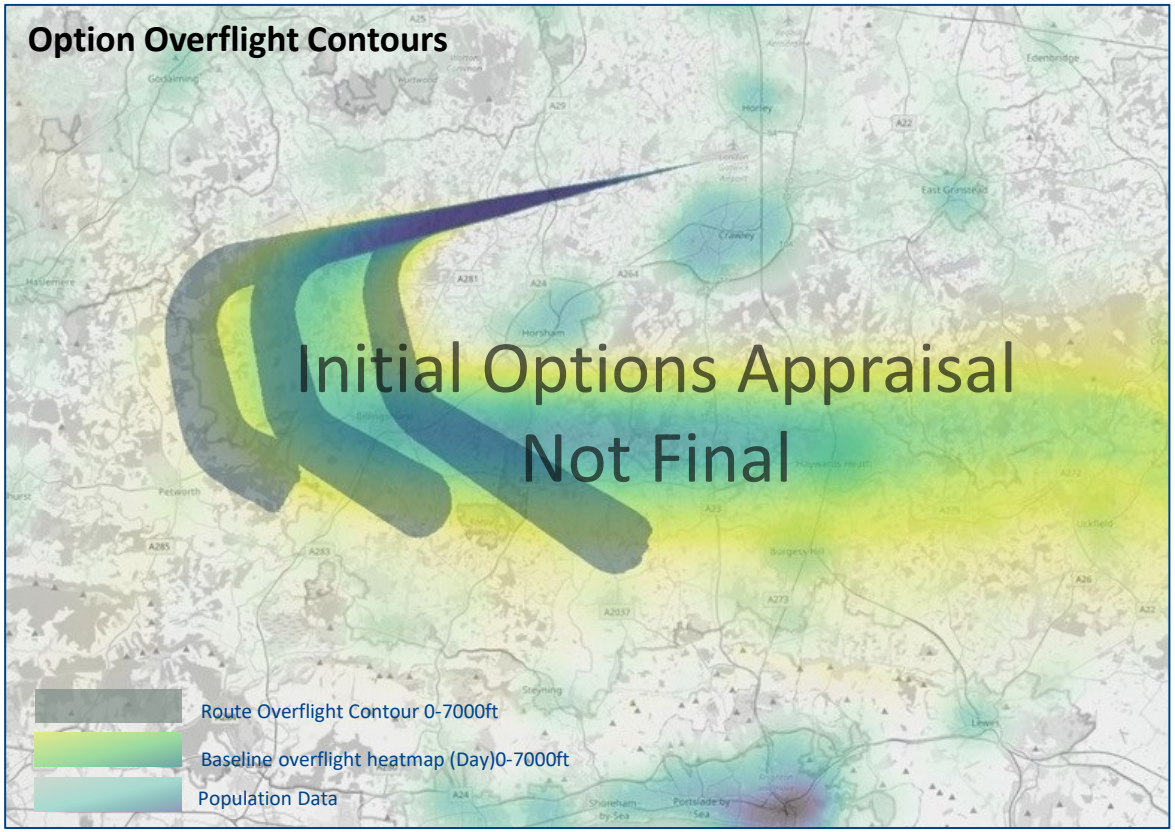
The western most route is located outside of the main swathe of concentration within the baseline however the overflight contour is partially located over some areas which are overflown on an infrequent basis. The other two routes within this option are located broadly within the baseline main swathe of concentration with the exception of the earliest parts of the approach.

At night, one route would introduce new overflight compared to the baseline as aircraft would join final approach under 10nm. Compared to the baseline, PBN arrival transitions have the potential to create significant concentration however this option offers some noise sharing. There may also be dispersal around the routes and this will be dependent on the level of vectoring required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

Supports the AMS through the implementation of PBN arrivals which would be for noise and environmental mitigation purposes as set out in the Government's Air Navigation Guidance. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design which could enable simplification, integration, safety and efficiency enhancements.

Overflight Illustration



Safety

No IFP design issues are anticipated with this option.

The more approaches available. the higher the changes of a safety error by ATC or Pilots. In order to mitigate this risk, additional assurance work would be required with a safety argument generated. This expected to be achievable but would require further investigation as part of Stage 3 activity should this option progress.

LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAE

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	4618	+1820

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAE

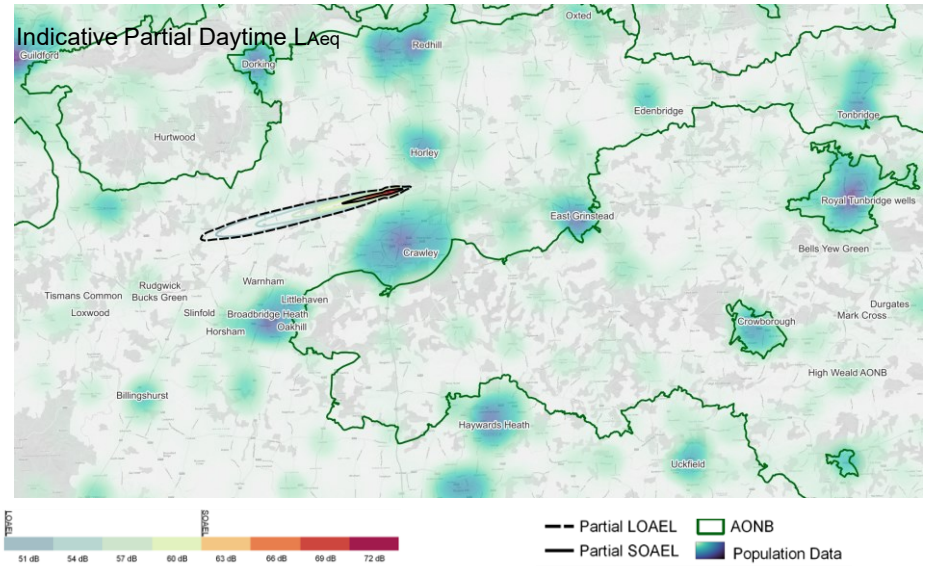
Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAE	15328	86	2246	No	0	1	0.1	X No
Interdependencies, conflicts & trade-offs								
Option has potential interactions with some departure routes however interactions are minimised with those departure routes that have been evolved to reduce interactions with arrivals. Route A is highly likely to have significant interactions with Farnborough and Heathrow.								

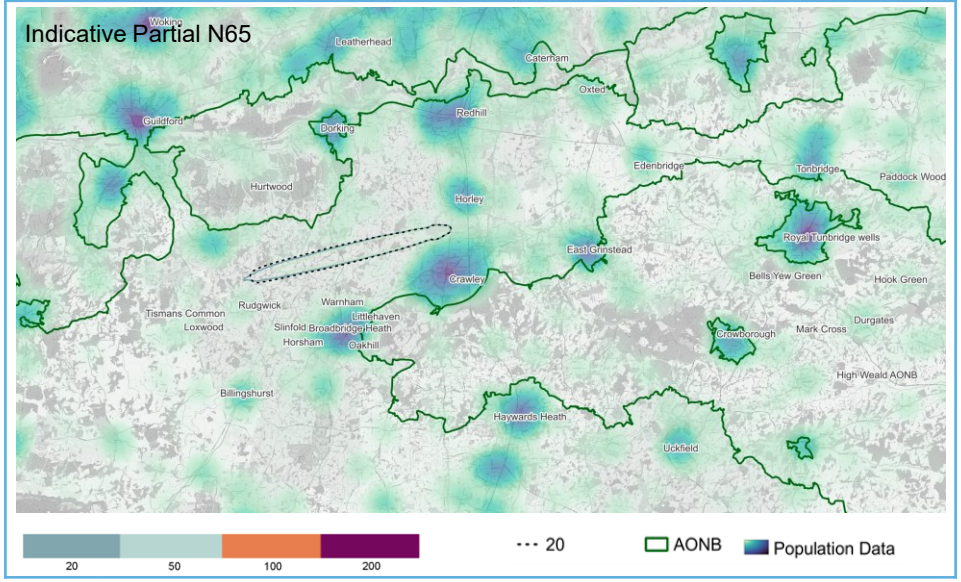
FASI-S ACP Initial Options Appraisal Dashboard

Option

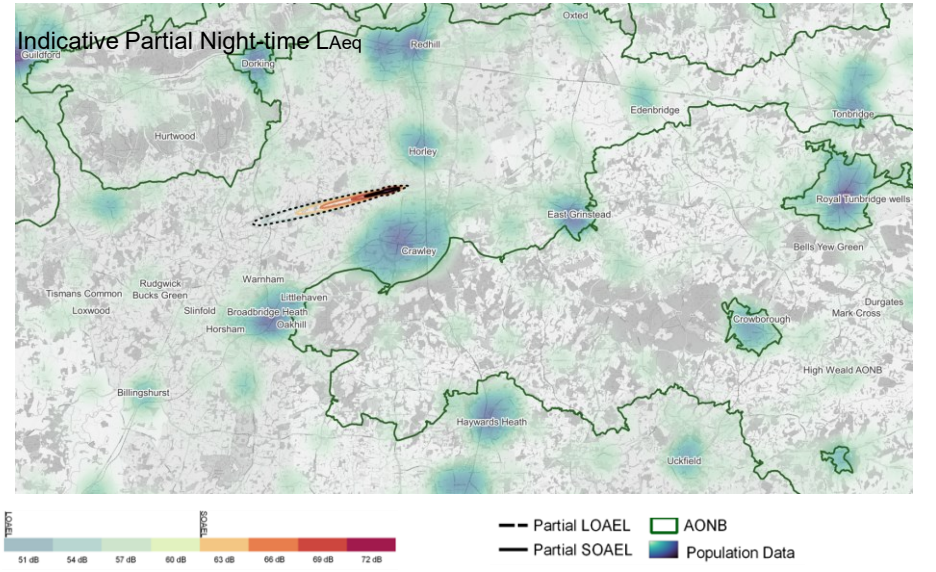
Easterly Arrivals: EAE

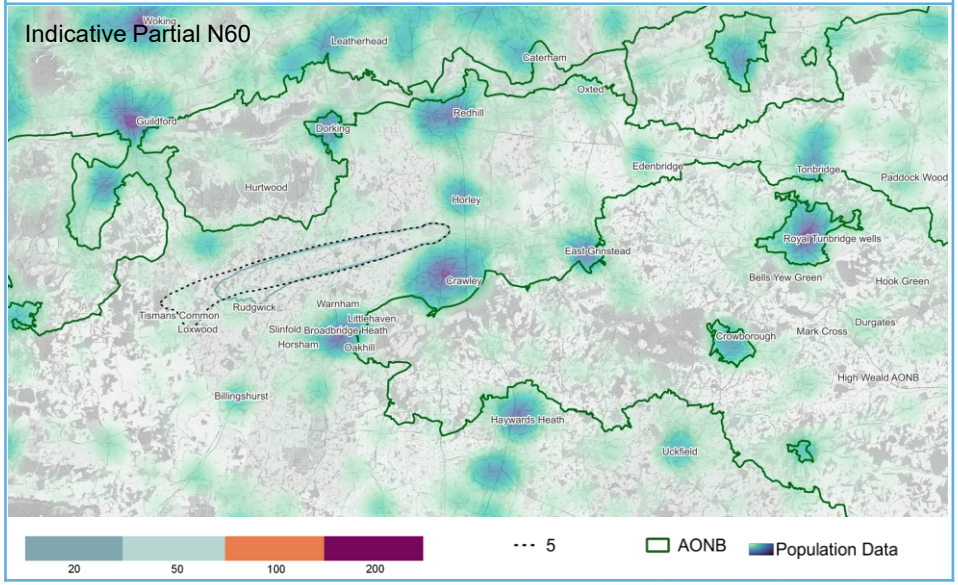
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAF

Description

This PBN arrival option joins the final approach at c.14nm. When developing this option there was a focus on meeting DP3 (limit adverse noise effects) and minimising total population overflown whilst also considering DP1, DP2, DP5, DP7, DP8, DP9 and the AMS.

Noise

This option is located outside of the main swathe of concentration within the baseline however the overflight contour is partially located over some areas which are overflown on an infrequent basis. A single PBN arrival transition has the potential to create significant concentration. This will be dependent on the level of vectoring also required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

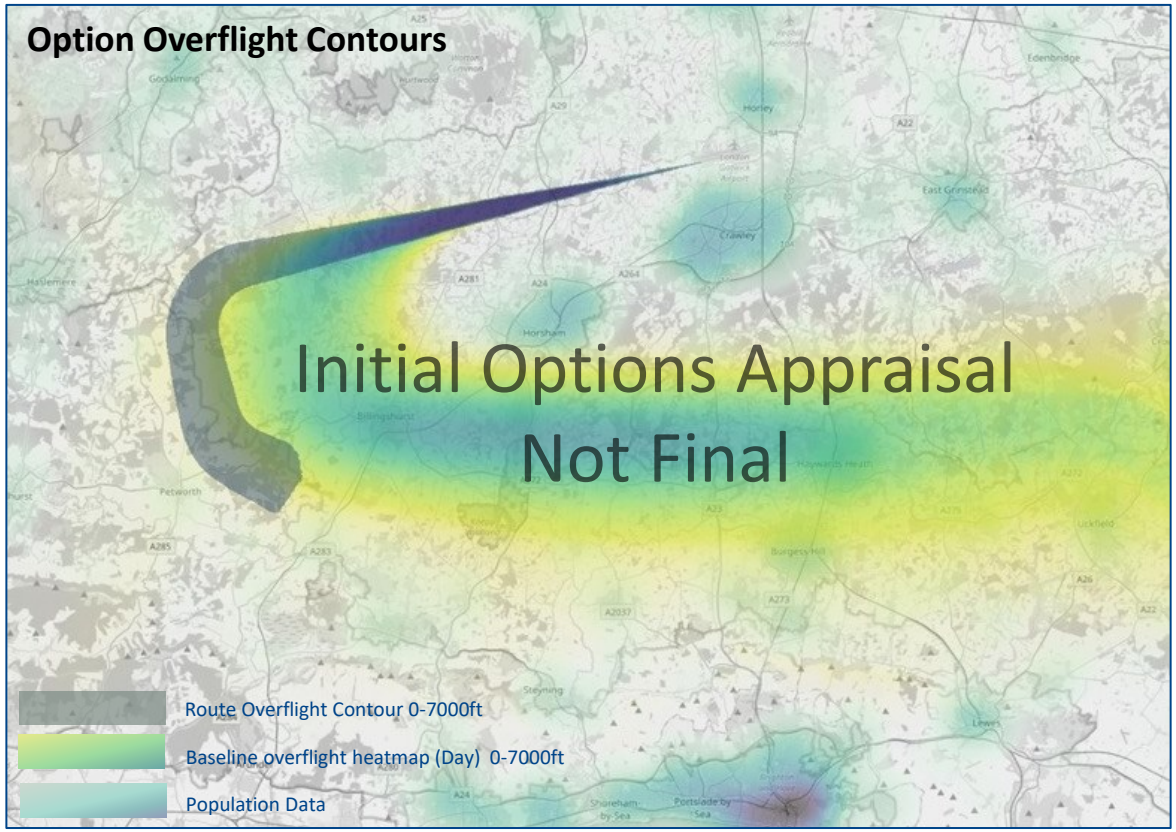
Supports the AMS through the implementation of PBN arrivals which would be for noise mitigation purposes as set out in the Government's Air Navigation Guidance. Environmentally, this option could have impacts in terms of fuel burn and CO2. PBN arrivals are expected to be used in conjunction with an RMA as part of a wider system design which could enable simplification, integration, safety and efficiency enhancements.

Safety

No IFP design issues are anticipated with this option. There is precedent for PBN to ILS procedures in the UK.

No safety concerns with the use of a single PBN approach transition onto final approach, assuming adequate separation from all other routes

Overflight Illustration



LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAF

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	2920	+122

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Impacts identified*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAF

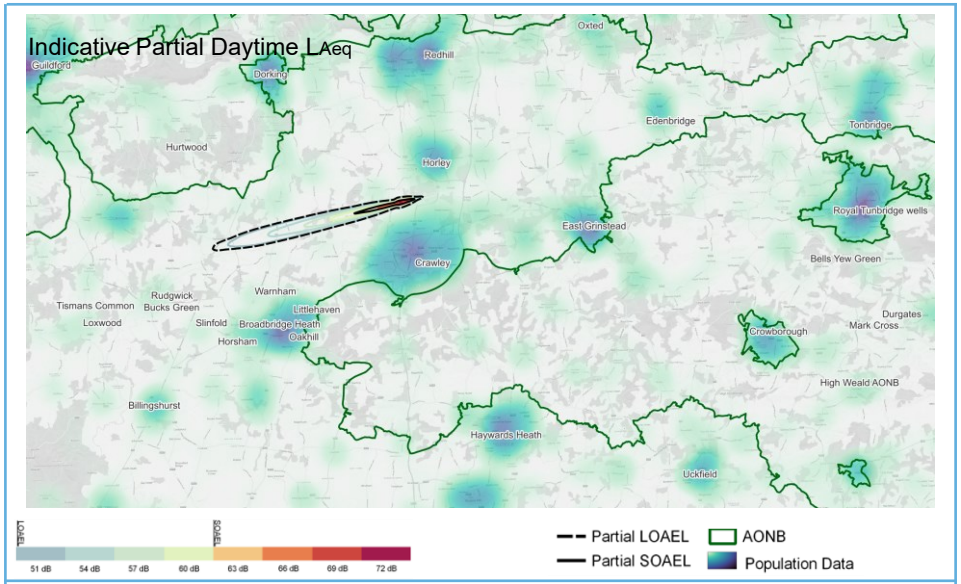
Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAF	2553	47	276	No	0	1	0.1	X No
Interdependencies, conflicts & trade-offs								
Option is highly likely to have significant interactions with Farnborough and Heathrow.								

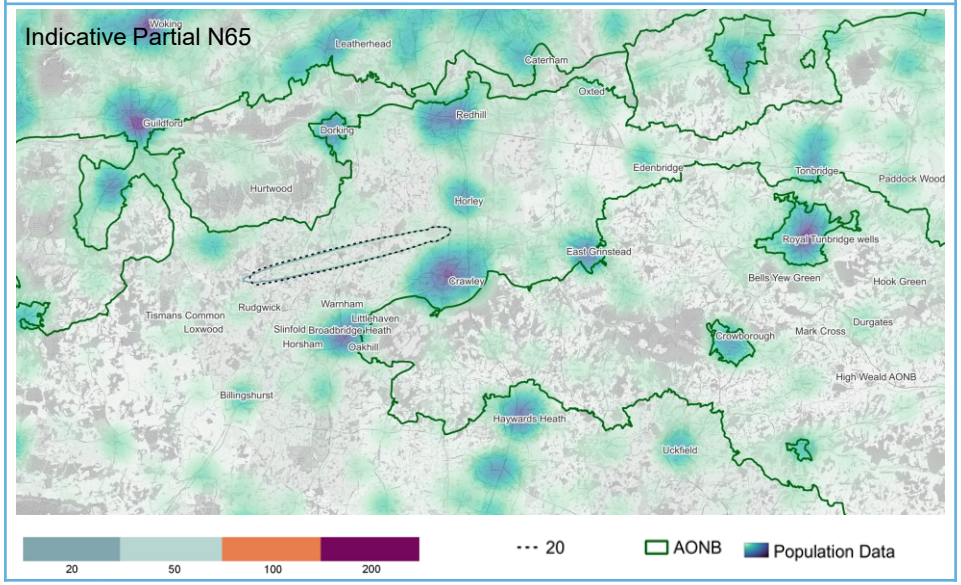
FASI-S ACP Initial Options Appraisal Dashboard

Option

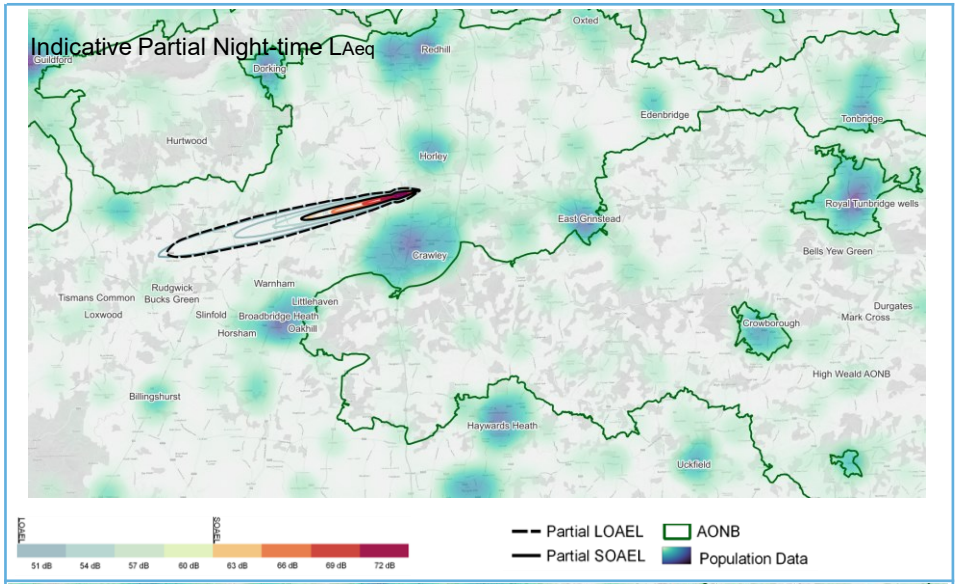
Easterly Arrivals: EAF

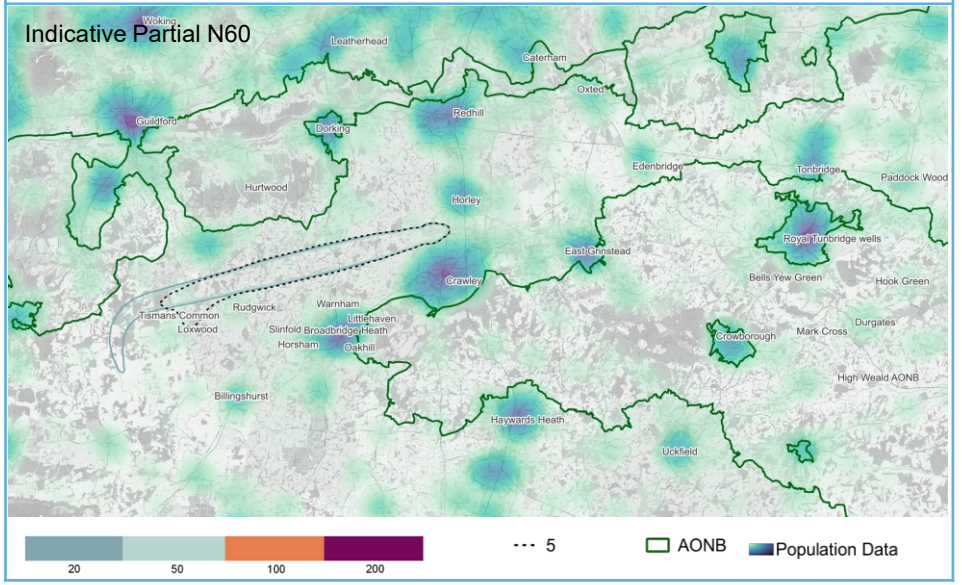
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAG

Description

This PBN arrival option joins the final approach at c.9nm. When developing this option there was a focus on meeting DP3 (limit adverse noise effects) and minimising population newly overflown whilst also considering DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS.

Noise

This option is located within the main arrival swathe however compared to the baseline a single PBN arrival transition has the potential to create significant concentration. This will be dependent on the level of vectoring also required which will be explored in further detail as part of Stage 3 should the option progress.

At night, this option would introduce new overflight compared to the baseline as aircraft would join final approach under 10nm. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

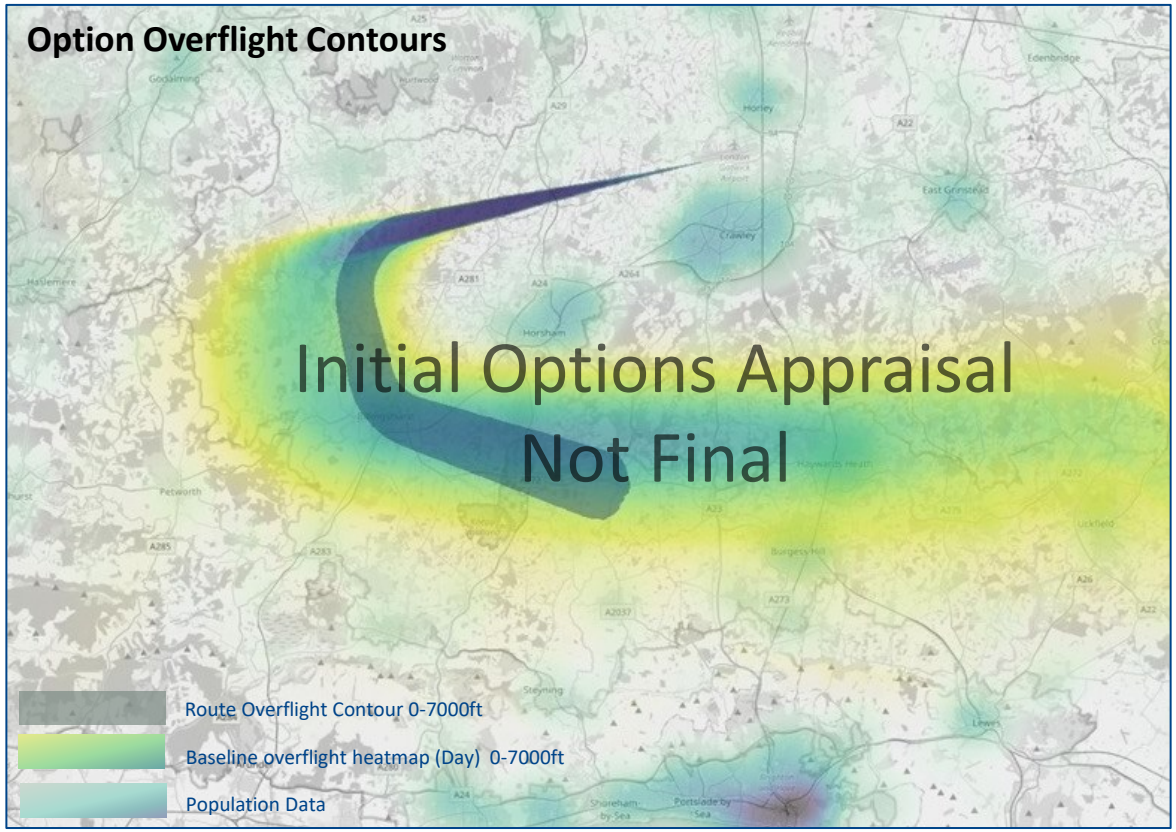
Supports the AMS through the implementation of PBN arrivals which would be for noise and environmental mitigation purposes as set out in the Government's Air Navigation Guidance. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design which could enable simplification, integration, safety and efficiency enhancements.

Safety

No IFP design issues are anticipated with this option. There is precedent for PBN to ILS procedures in the UK.

No safety concerns with the use of a single PBN approach transition onto final approach, assuming adequate separation from all other routes

Overflight Illustration



LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAG

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	5883	+3085

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAG

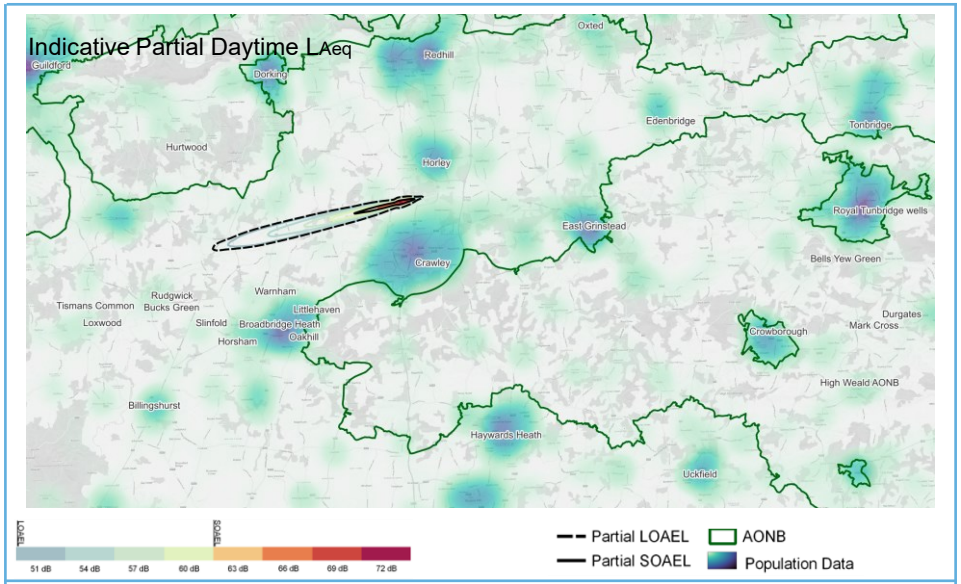
Option Name	Noise			Air Quality	Tranquillity (Overflight area km^2)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAG	12790	36	52	No	0	1	0.1	✓ Yes
Interdependencies, conflicts & trade-offs								
Option has potential interactions with some departure routes however interactions are minimised with those departure routes that have been evolved to reduce interactions with arrivals.								

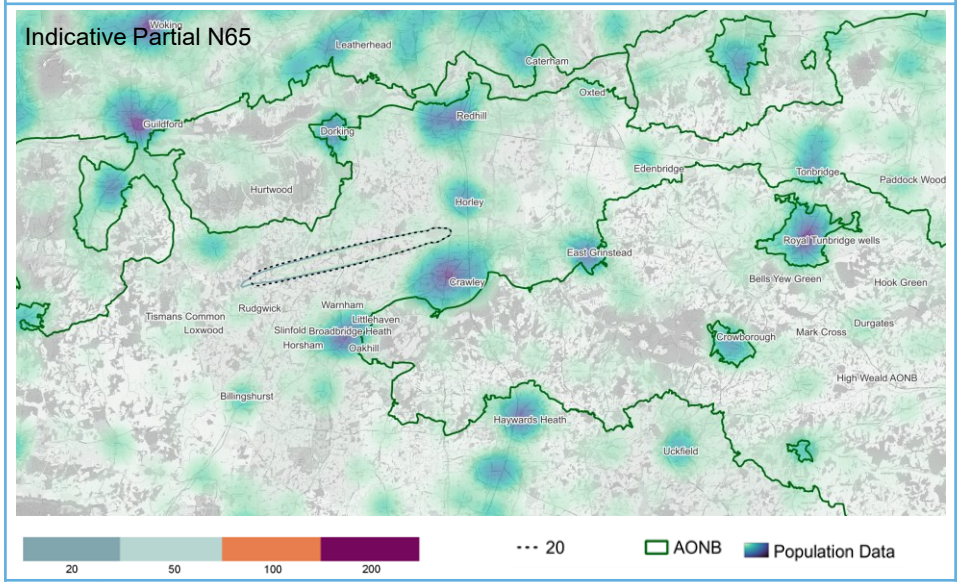
FASI-S ACP Initial Options Appraisal Dashboard

Option

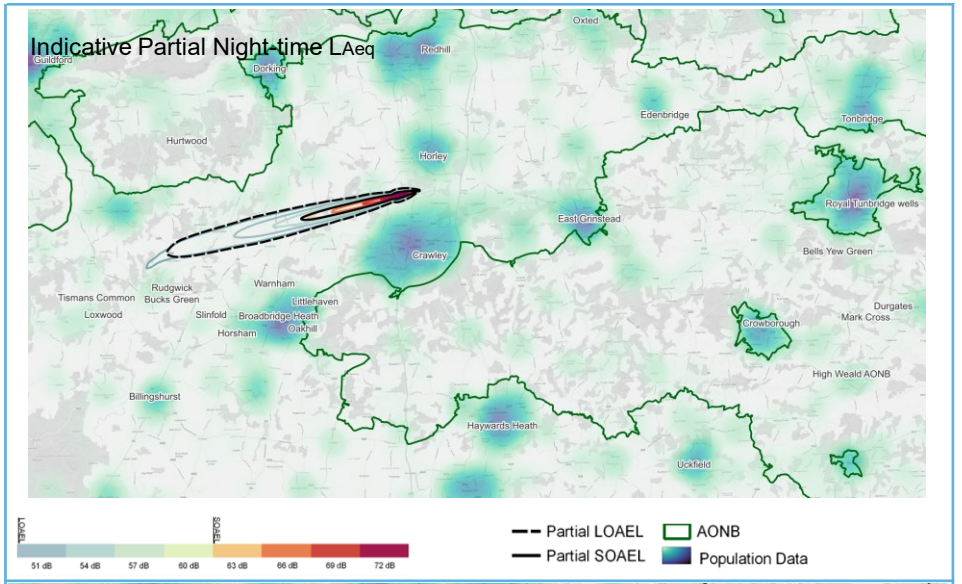
Easterly Arrivals: EAG

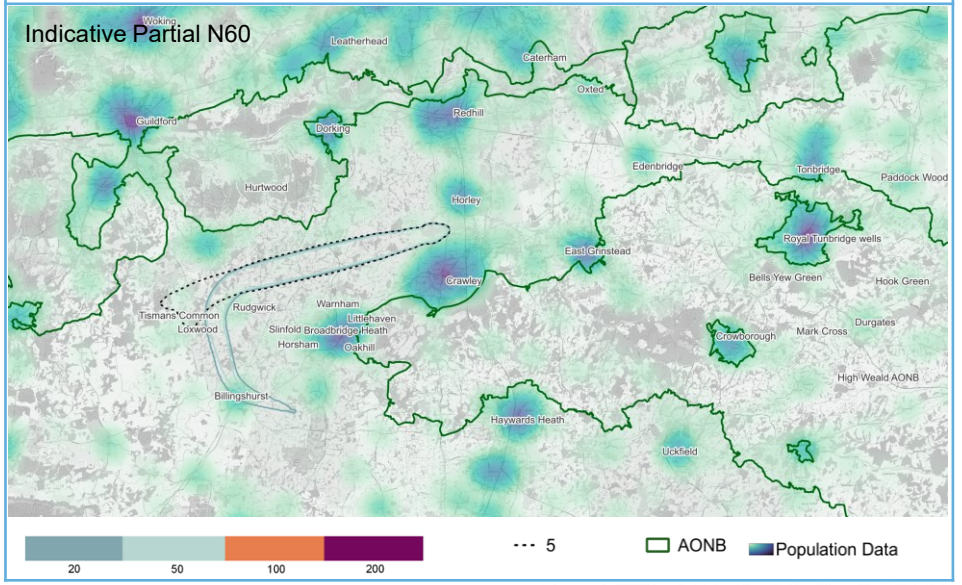
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAI

Description

This PBN arrival option joins the final approach at c.10nm. When developing this option there was a focus on meeting DP3 (limit adverse noise effects), DP6 (Optimise Use of Aircraft Capabilities) and minimising population newly overflown whilst also considering DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS.

Noise

This option offers a slight lateral change in the early parts of the approach compared to the baseline however large parts of the option remain within the baseline swathe including the turn onto final approach. Compared to the baseline, a single PBN arrival transition has the potential to create significant concentration. This will be dependent on the level of vectoring also required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

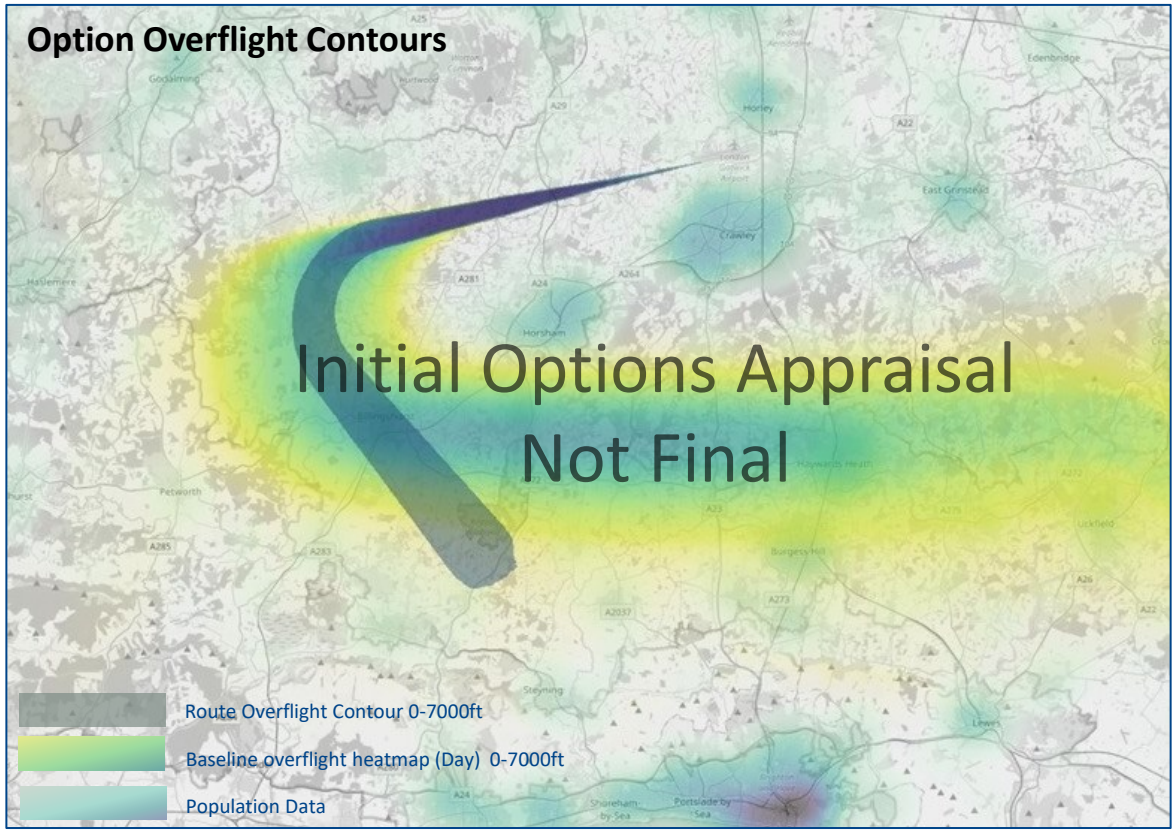
Supports the AMS through the implementation of PBN arrivals which would be for noise and environmental mitigation purposes as set out in the Government's Air Navigation Guidance. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design which could enable simplification, integration, safety and efficiency enhancements.

Safety

No IFP design issues are anticipated with this option. There is precedent for PBN to ILS procedures in the UK.

No safety concerns with the use of a single PBN approach transition onto final approach, assuming adequate separation from all other routes

Overflight Illustration



LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAI

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	5346	2548

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAI

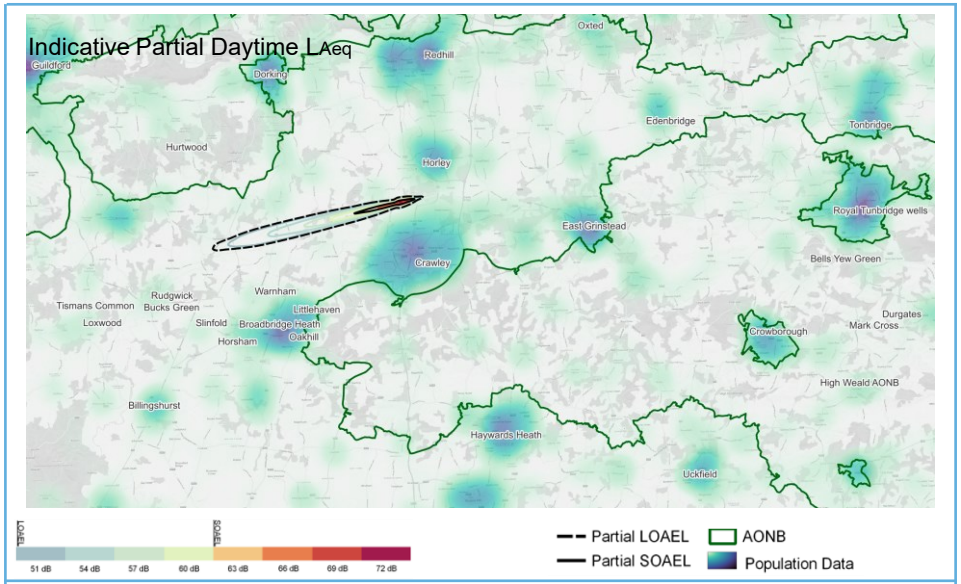
Option Name	Noise			Air Quality	Tranquillity (Overflight area km^2)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAI	12368	113	213	No	0	1	0.1	✓ Yes
Interdependencies, conflicts & trade-offs								
Option has potential interactions with some departure routes however interactions are minimised with those departure routes that have been evolved to reduce interactions with arrivals.								

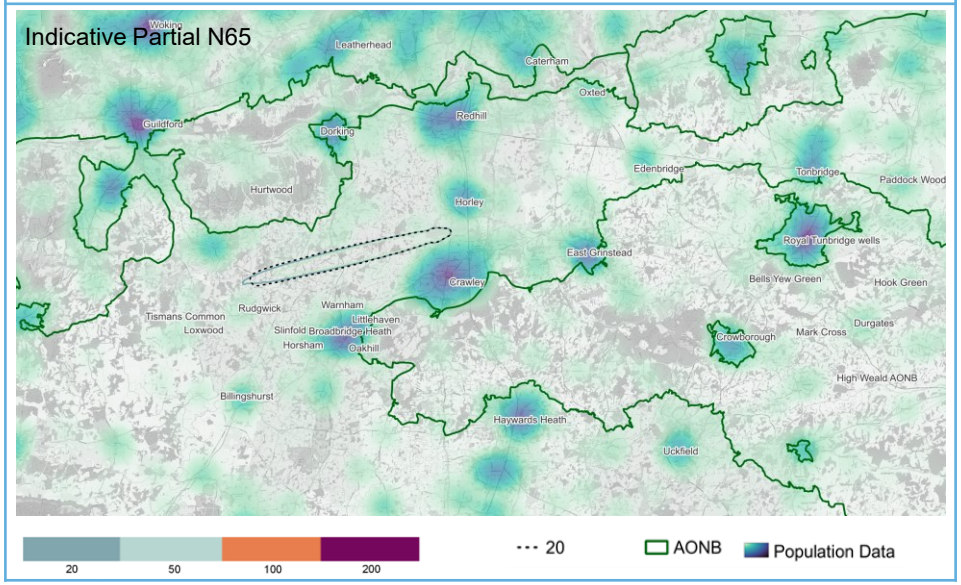
FASI-S ACP Initial Options Appraisal Dashboard

Option

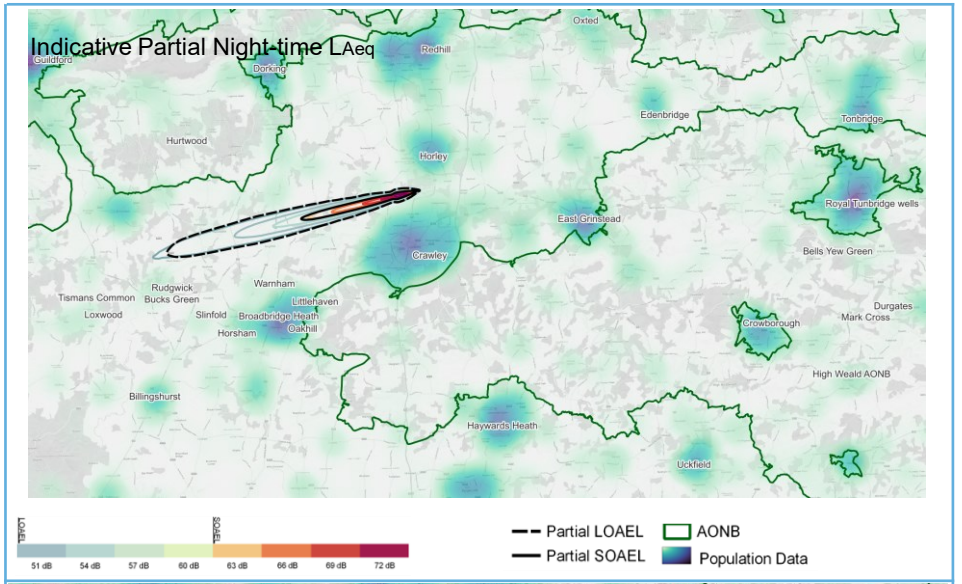
Easterly Arrivals: EAI

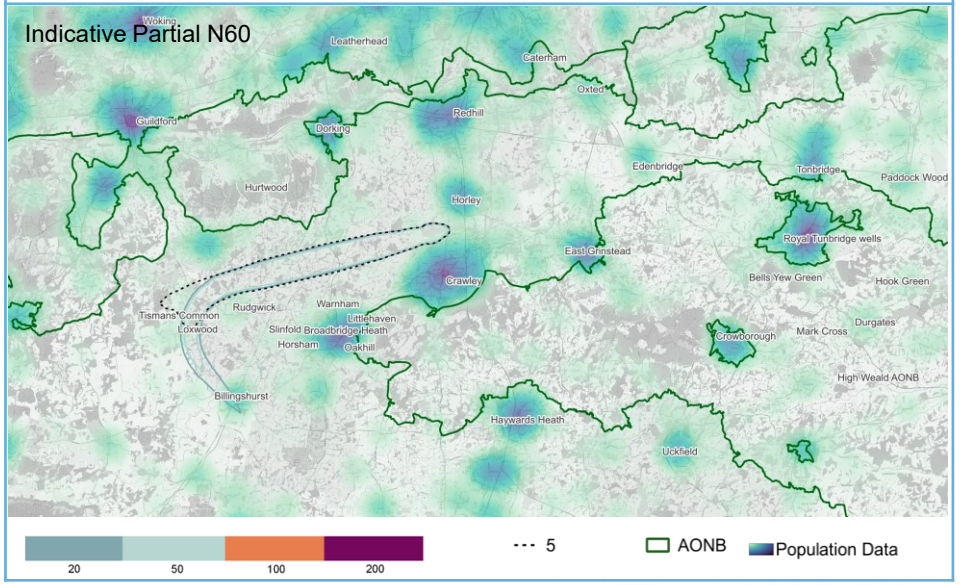
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAJ

Description

This option offers four PBN arrivals which could be used in a respite configuration. The routes join the final approach at c.14nm, c.12nm, c.10.5nm and c.8.5nm. When developing this option there was a focus on meeting DP3 (limit adverse noise effects), DP7 (Long term predictability and adaptability) and minimising population newly overflown. DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS were also considered.

Noise

The western most route is located outside of the main swathe of concentration within the baseline however the overflight contour is partially located over some areas which are overflown on an infrequent basis. The other three routes within this option are located broadly within the baseline main swathe of concentration.

The initial sections of the approaches have small areas of overlap in the overflight contours which could affect respite benefits. Should this option progress this could be refined as part of the process of linking the designs to the airspace above 7000ft.

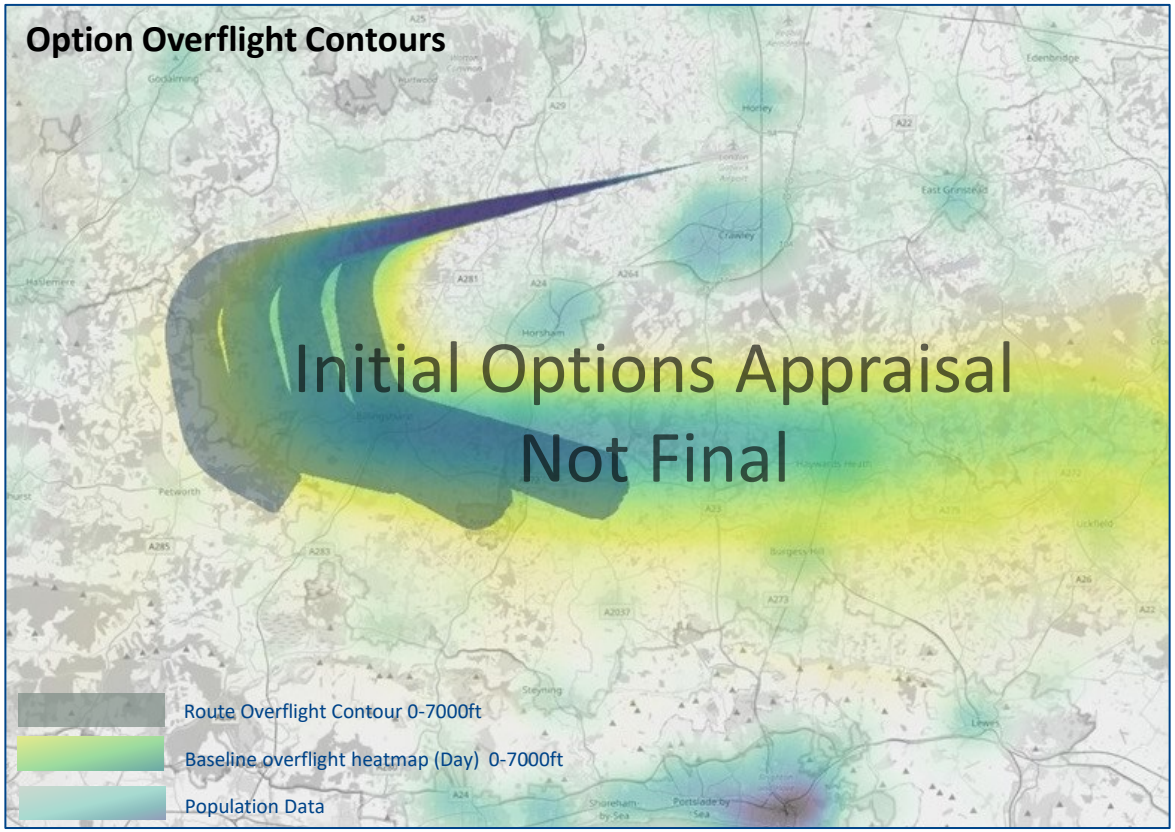
At night, one route would introduce new overflight compared to the baseline as aircraft would join final approach under 10nm.

Compared to the baseline, PBN arrival transitions have the potential to create significant concentration however this option offers some noise sharing. There may also be dispersal around the routes and this will be dependent on the level of vectoring required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

Supports the AMS through the implementation of PBN arrivals which would be for noise and environmental mitigation purposes as set out in the Government's Air Navigation Guidance. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design which could enable simplification, integration, safety and efficiency enhancements.

Overflight Illustration



Safety

No IFP design issues are anticipated with this option.

The more approaches available. the higher the changes of a safety error by ATC or Pilots. In order to mitigate this risk, additional assurance work would be required with a safety argument generated. This expected to be achievable but would require further investigation as part of Stage 3 activity should this option progress.

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAJ

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	2557	-241

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAJ

Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAJ	22636	47	292	No	0	1	0.1	✓ Yes

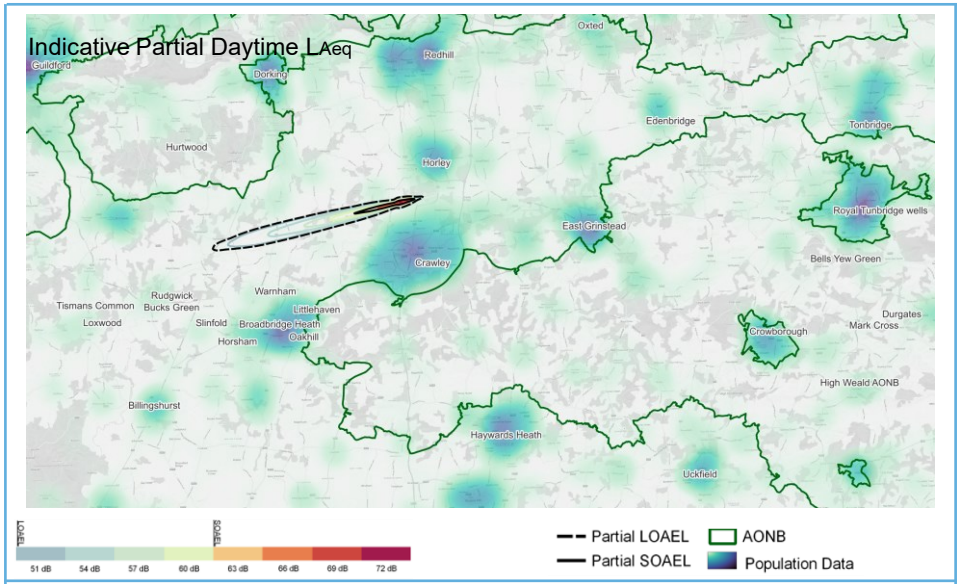
Interdependencies, conflicts & trade-offs
Option has potential interactions with some departure routes however interactions are minimised with those departure routes that have been evolved to reduce interactions with arrivals. Route A and potentially route B are highly likely to have significant interactions with Farnborough and Heathrow.

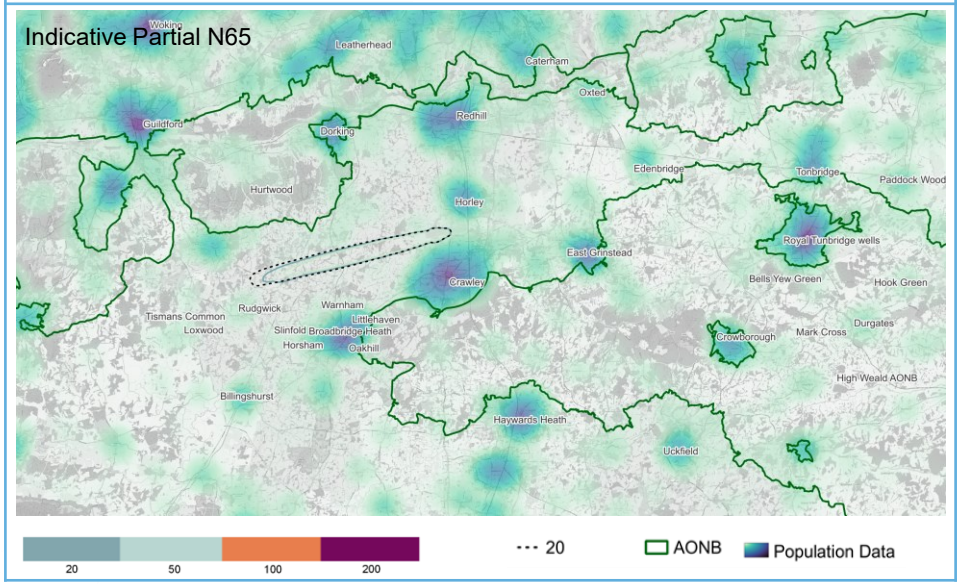
FASI-S ACP Initial Options Appraisal Dashboard

Option

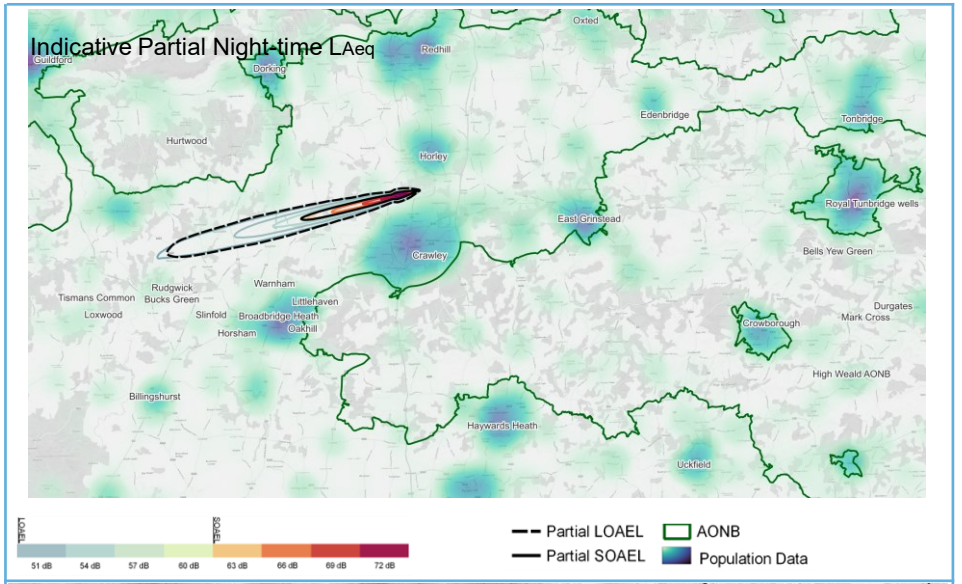
Easterly Arrivals: EAJ

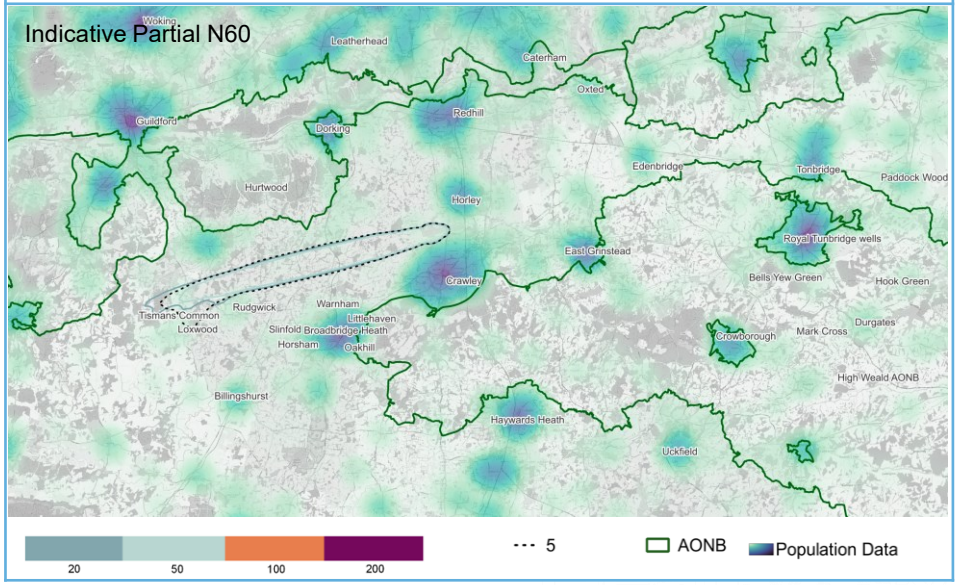
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAK

Description

This option offers two PBN arrivals which could be used in a respite configuration. The routes join the final approach at c.9nm and c.12.5nm. This option was developed following stakeholder feedback. When developing this option, there was a focus on DP3, DP7 and balancing total population overflown and population newly overflown. DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS were also considered.

Noise

The two routes within this option join final approach within the existing baseline main swathe of concentration however the sections before the join offer a lateral change compared to today which is outside of the main swathe.

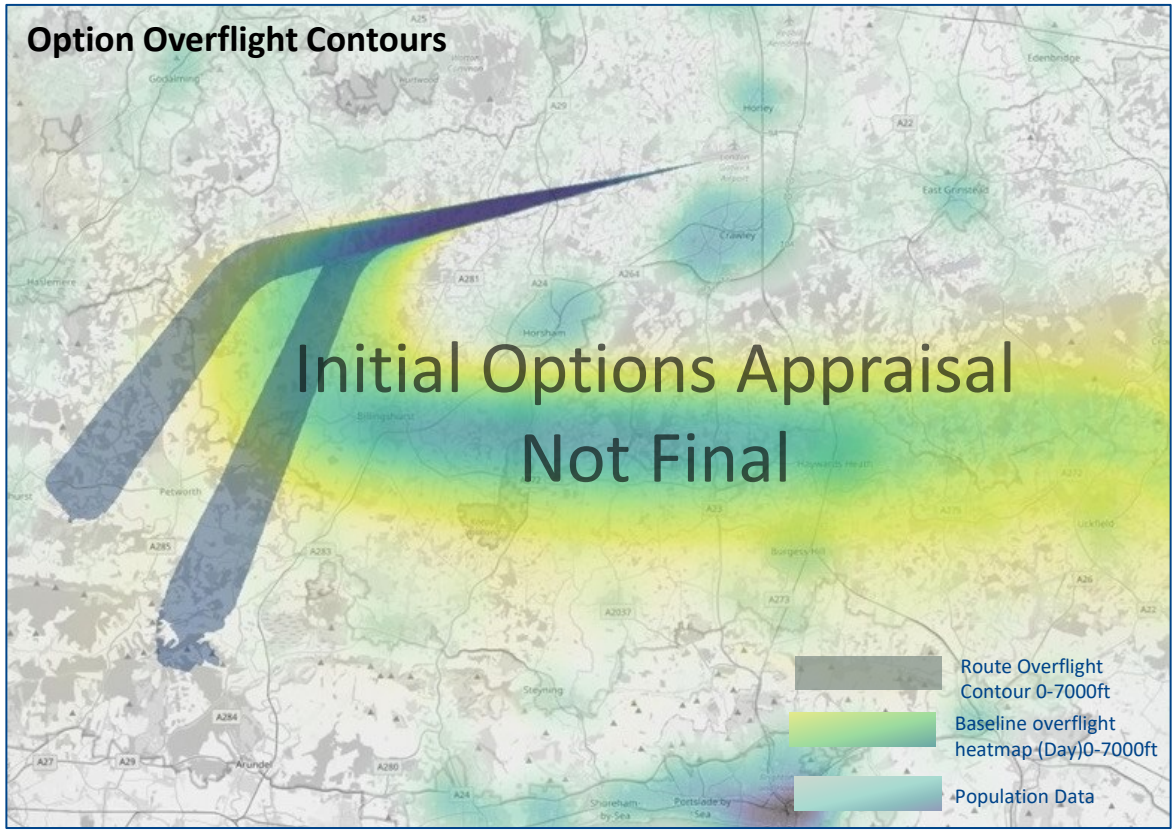
At night, this option would introduce new overflight compared to the baseline as aircraft would join final approach under 10nm.

Compared to the baseline, PBN arrival transitions have the potential to create significant concentration however this option offers some noise sharing. There may also be dispersal around the routes and this will be dependent on the level of vectoring required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

Supports the AMS through the implementation of PBN arrivals which would be for noise mitigation purposes as set out in the Government's Air Navigation Guidance. Environmentally, this option could have impacts in terms of fuel burn and CO2. PBN arrivals are expected to be used in conjunction with an RMA as part of a wider system design which could enable simplification, integration, safety and efficiency enhancements.

Overflight Illustration



Safety

No IFP design issues are anticipated with this option.

The more approaches available. the higher the changes of a safety error by ATC or Pilots. In order to mitigate this risk, additional assurance work would be required with a safety argument generated. This expected to be achievable but would require further investigation as part of Stage 3 activity should this option progress.

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FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAK

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	2836	+38

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Impacts identified*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Potential for positive compared to baseline*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAK

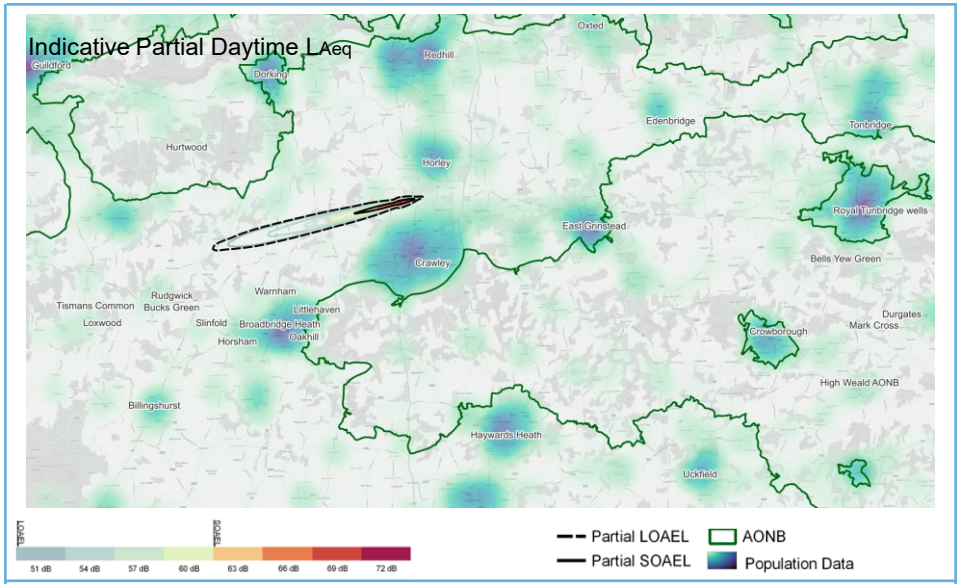
Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAK	5851	2266	1593	No	0	1	0.1	X No
Interdependencies, conflicts & trade-offs								
Feedback from NERL has indicated that this option has significant interactions with the flows of Farnborough and Heathrow traffic within the wider airspace and would therefore require evolution. This means that the portion of the routes from 7000- c.4000ft would likely need to be moved laterally, in order to integrate with the wider airspace network.								

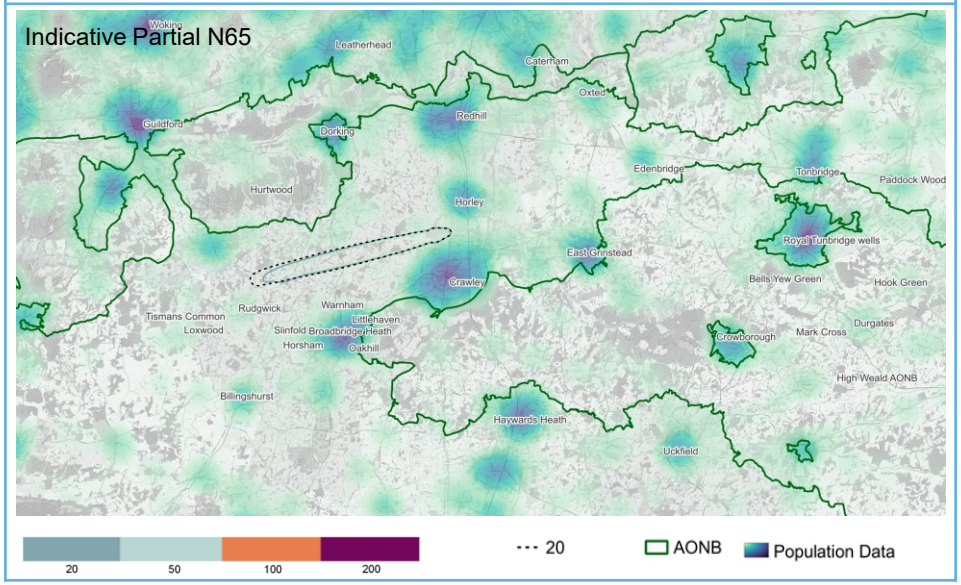
FASI-S ACP Initial Options Appraisal Dashboard

Option

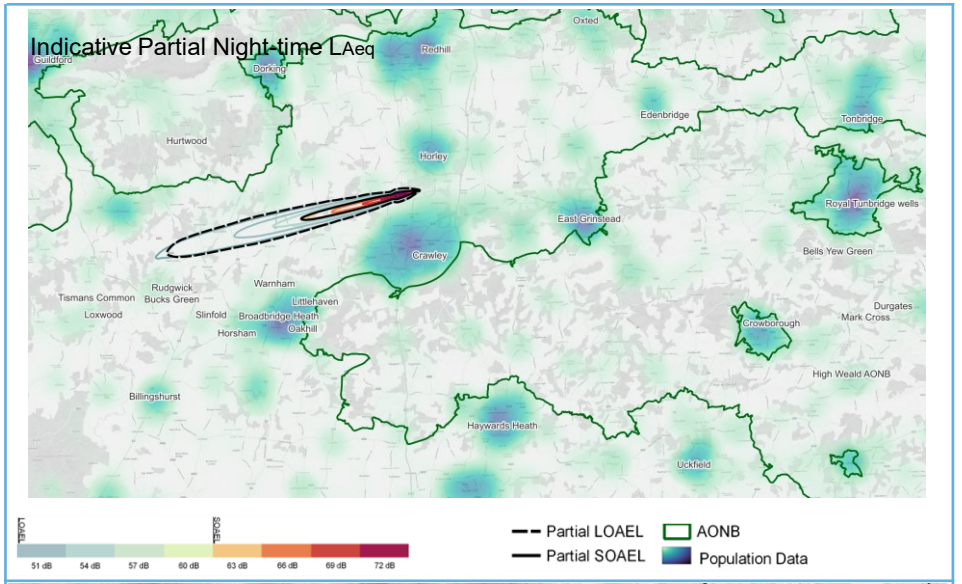
Easterly Arrivals: EAK

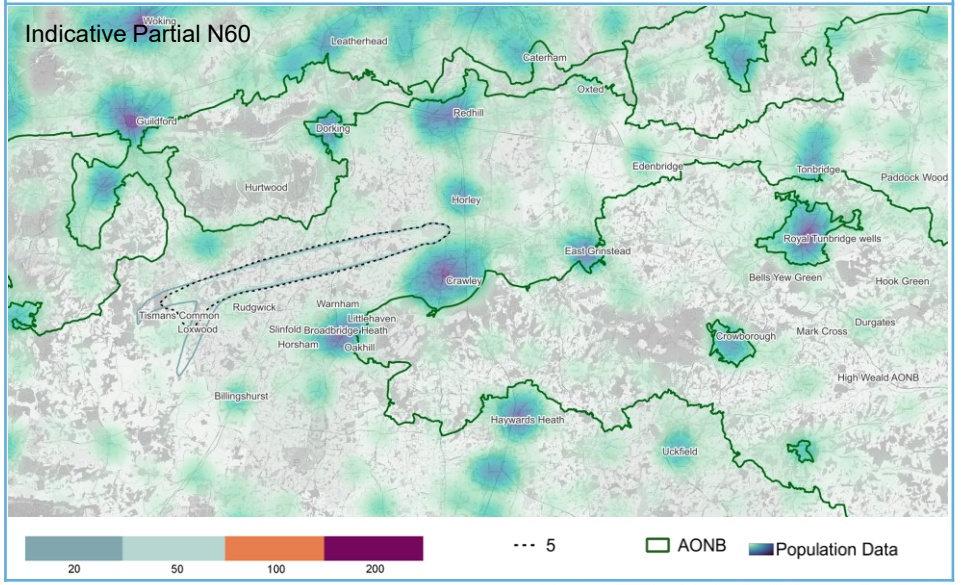
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAL

Description

This option offers two PBN arrivals which could be used in a respite configuration. The routes join the final approach at c.8.0nm and c.11.5nm. This option was developed following stakeholder feedback. When developing this option, there was a focus on DP3, DP7 and balancing total population overflown and population newly overflown. DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS were also considered.

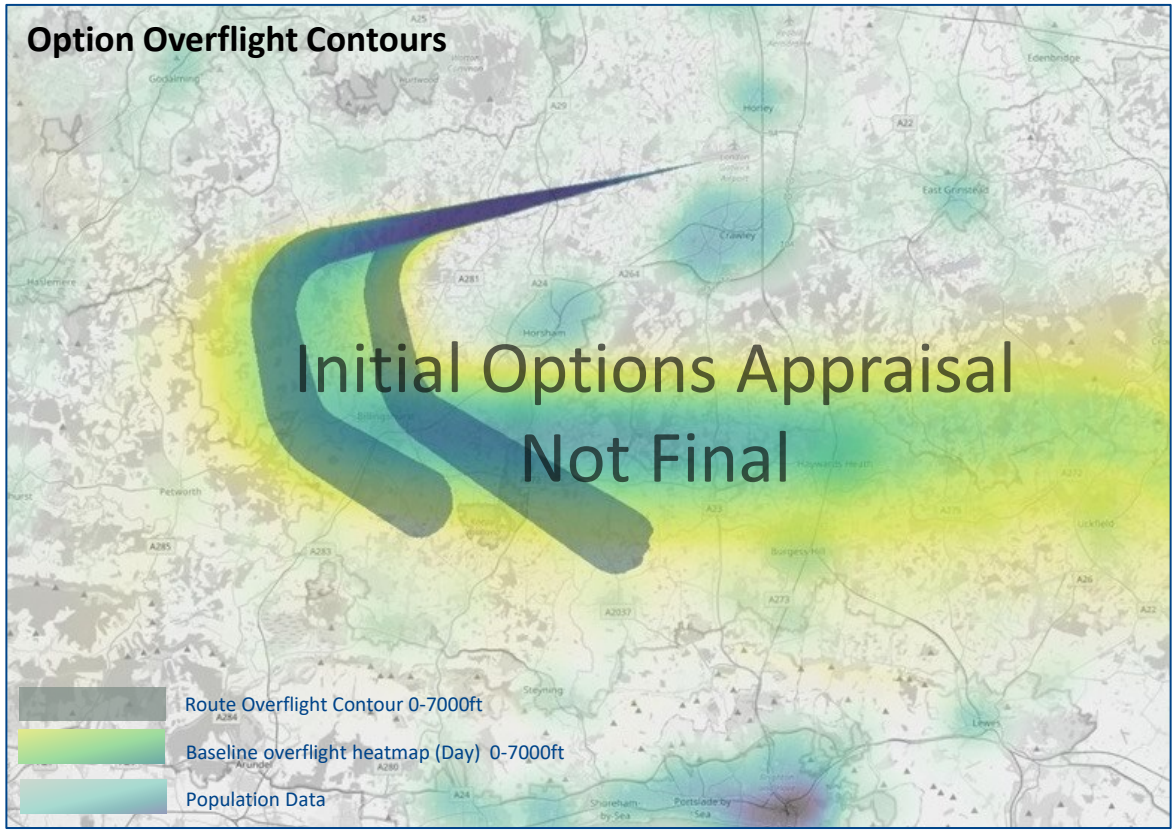
Noise

The two routes within this option are located broadly within the baseline main swathe of concentration. At night, this option would introduce new overflight compared to the baseline as aircraft would join final approach under 10nm. Compared to the baseline, PBN arrival transitions have the potential to create significant concentration however this option offers some noise sharing. There may also be dispersal around the routes and this will be dependent on the level of vectoring required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

Supports the AMS through the implementation of PBN arrivals which would be for noise and environmental mitigation purposes as set out in the Government's Air Navigation Guidance. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design which could enable simplification, integration, safety and efficiency enhancements.

Overflight Illustration



Safety

No IFP design issues are anticipated with this option.

The more approaches available. the higher the changes of a safety error by ATC or Pilots. In order to mitigate this risk, additional assurance work would be required with a safety argument generated. This expected to be achievable but would require further investigation as part of Stage 3 activity should this option progress.

LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAL

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	6051	+3253

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAL

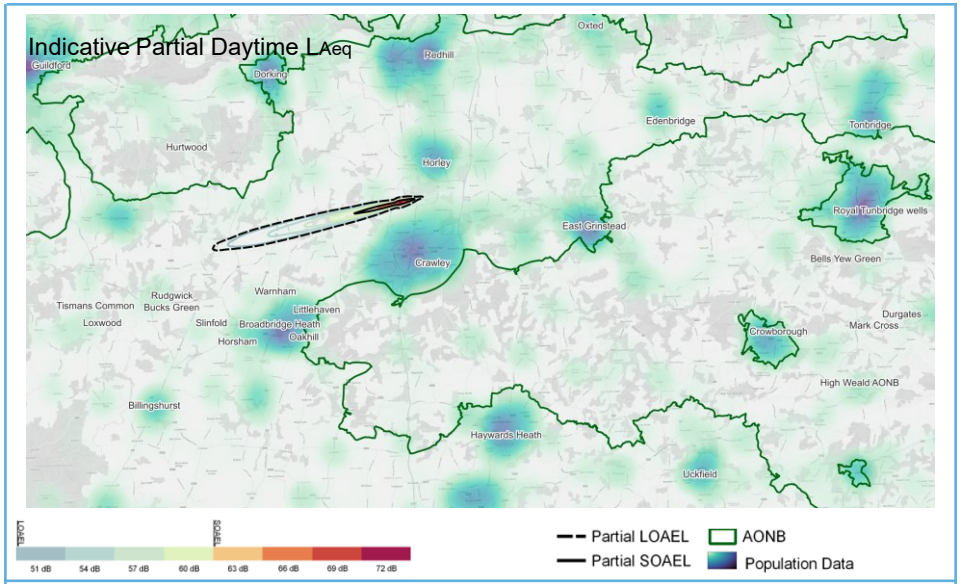
Option Name	Noise			Air Quality	Tranquillity (Overflight area km^2)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAL	14189	36	2010	No	0	1	0.1	✓ Yes
Interdependencies, conflicts & trade-offs								
Option has potential interactions with some departure routes however interactions are minimised with those departure routes that have been evolved to reduce interactions with arrivals.								

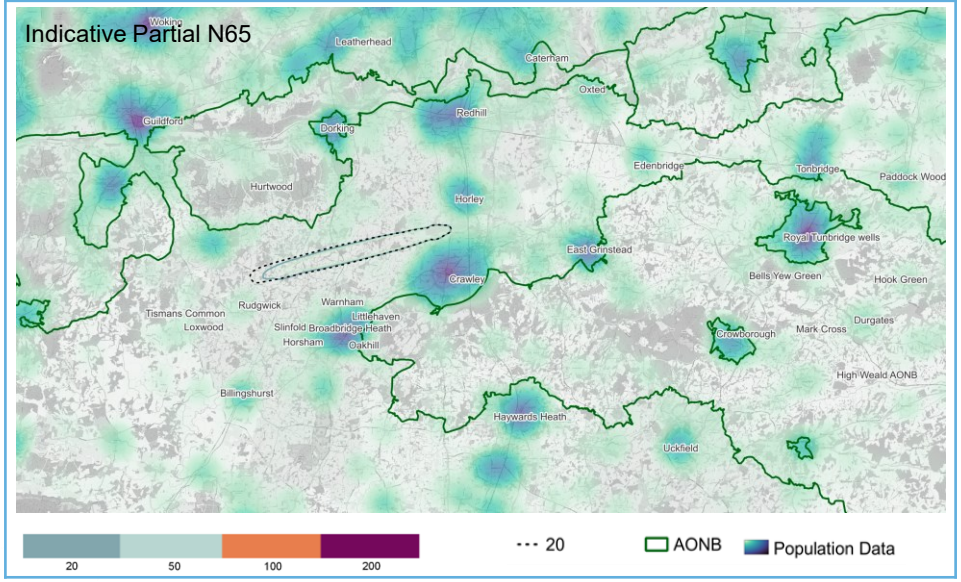
FASI-S ACP Initial Options Appraisal Dashboard

Option

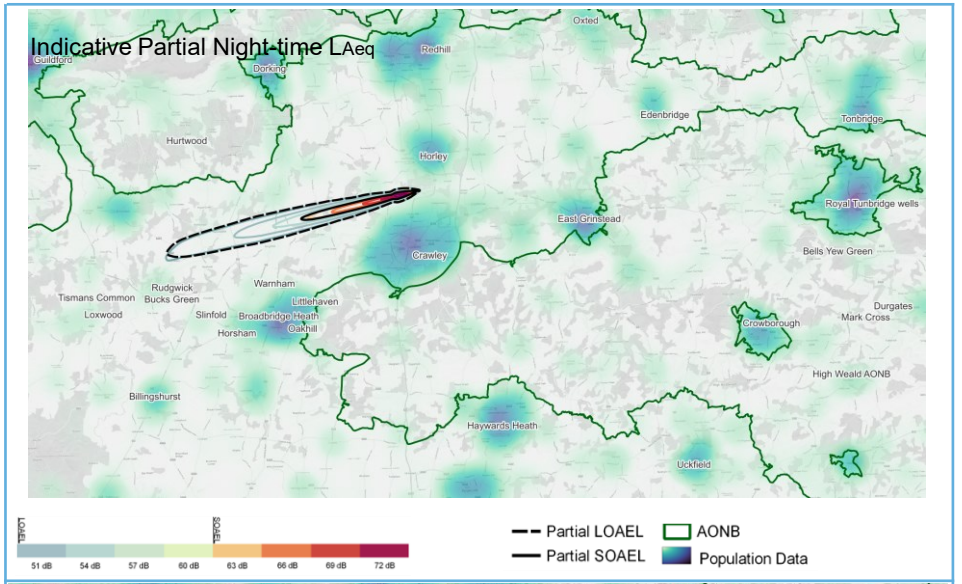
Easterly Arrivals: EAL

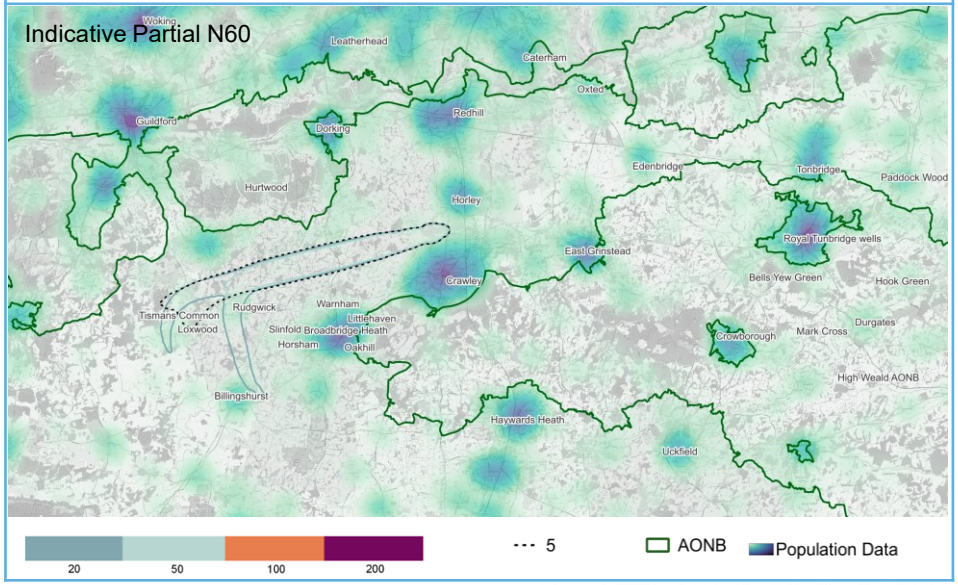
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAM

Description

This PBN arrival option joins the final approach at c.14nm. This option was developed following stakeholder feedback. When developing this option there was a focus on meeting DP3 (limit adverse noise effects), whilst balancing population overflown against minimising population newly overflown. DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS were also considered.

Noise

This option is located outside of the main swathe of concentration within the baseline however the overflight contour is partially located over some areas which are overflown on an infrequent basis. A single PBN arrival transition has the potential to create significant concentration. This will be dependent on the level of vectoring also required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

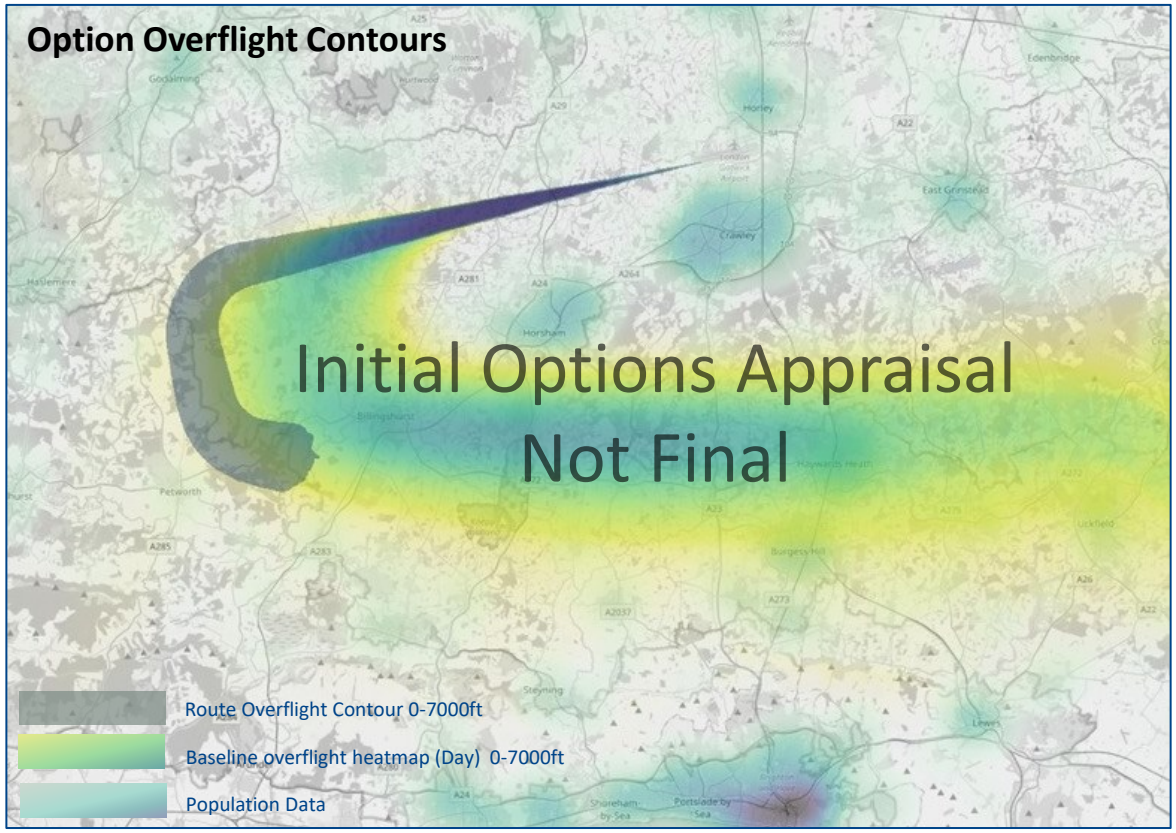
Supports the AMS through the implementation of PBN arrivals which would be for noise mitigation purposes as set out in the Government's Air Navigation Guidance. Environmentally, this option could have impacts in terms of fuel burn and CO2.PBN arrivals are expected to be used in conjunction with an RMA as part of a wider system design which could enable simplification, integration, safety and efficiency enhancements.

Safety

No IFP design issues are anticipated with this option. There is precedent for PBN to ILS procedures in the UK.

No safety concerns with the use of a single PBN approach transition onto final approach, assuming adequate separation from all other routes

Overflight Illustration



FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAM

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	2936	+138

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Impacts identified*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAM

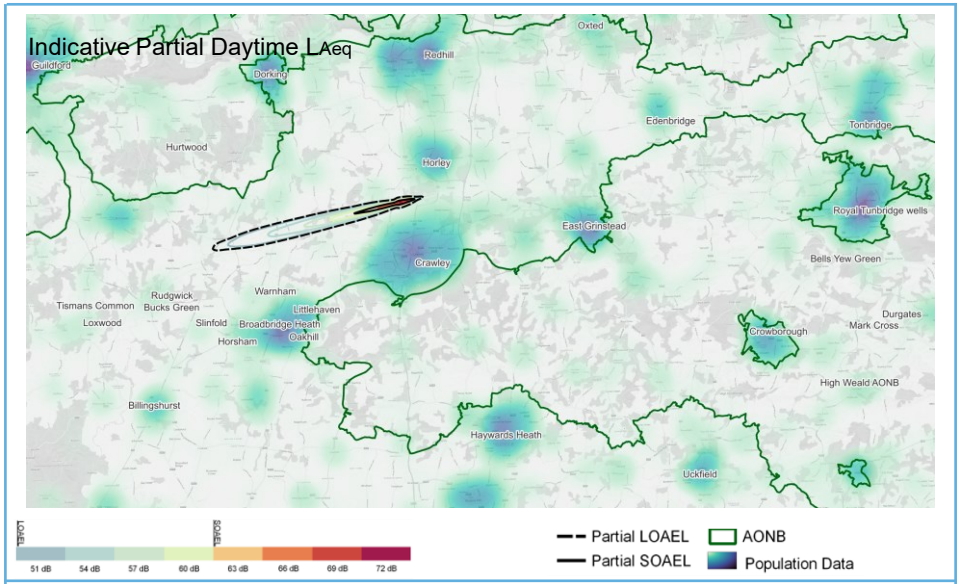
Option Name	Noise			Air Quality	Tranquillity (Overflight area km^2)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAM	2616	37	207	No	0	1	0.1	X No
Interdependencies, conflicts & trade-offs								
Option is highly likely to have significant interactions with Farnborough and Heathrow.								

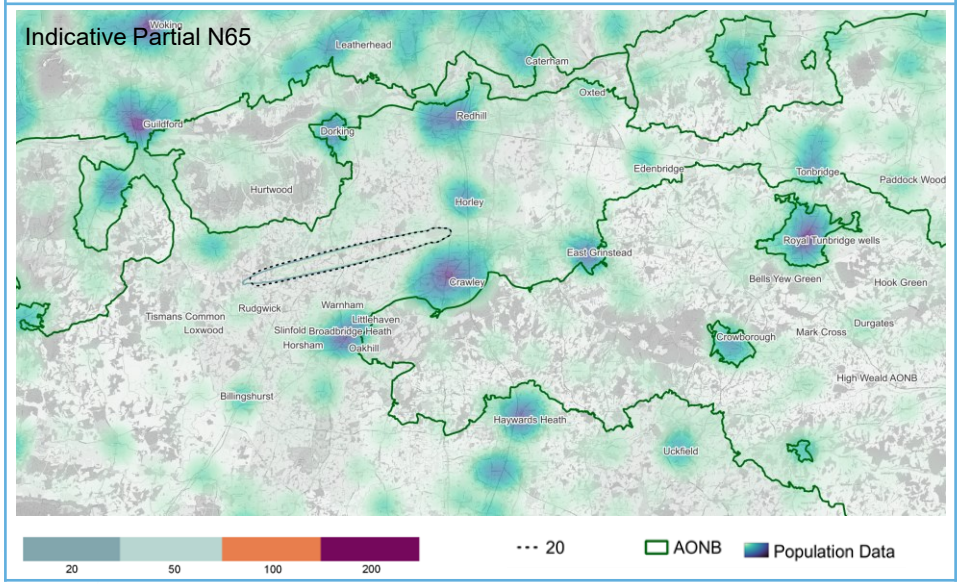
FASI-S ACP Initial Options Appraisal Dashboard

Option

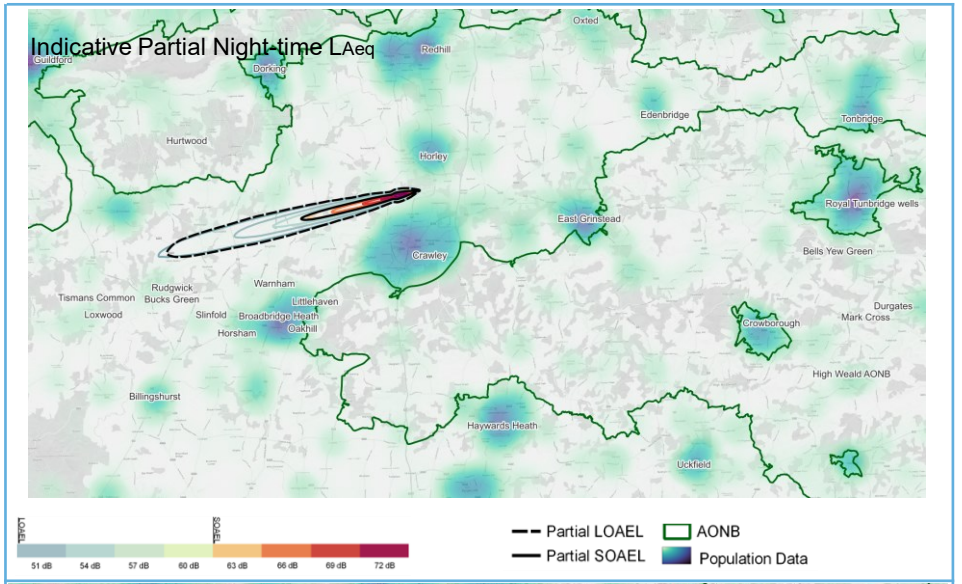
Easterly Arrivals: EAM

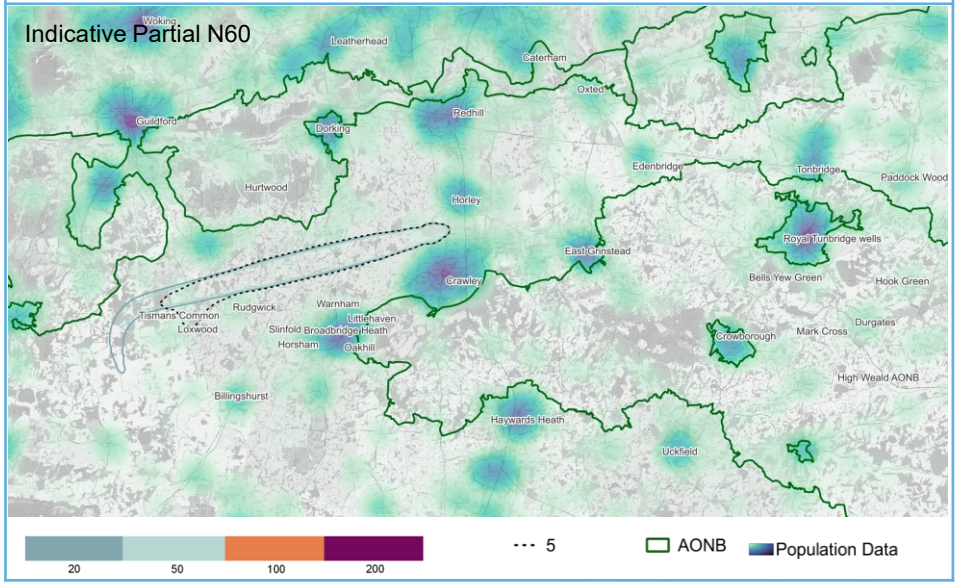
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAN

Description

This PBN arrival option joins the final approach at c.9.5nm and it was developed following stakeholder feedback. When developing this option there was a focus on meeting DP3 (limit adverse noise effects), whilst balancing population overflown against minimising population newly overflown. DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS were also considered.

Noise

This option offers a slight lateral change in the early parts of the approach compared to the baseline however large parts of the option remain within the baseline swathe including the turn onto final approach.

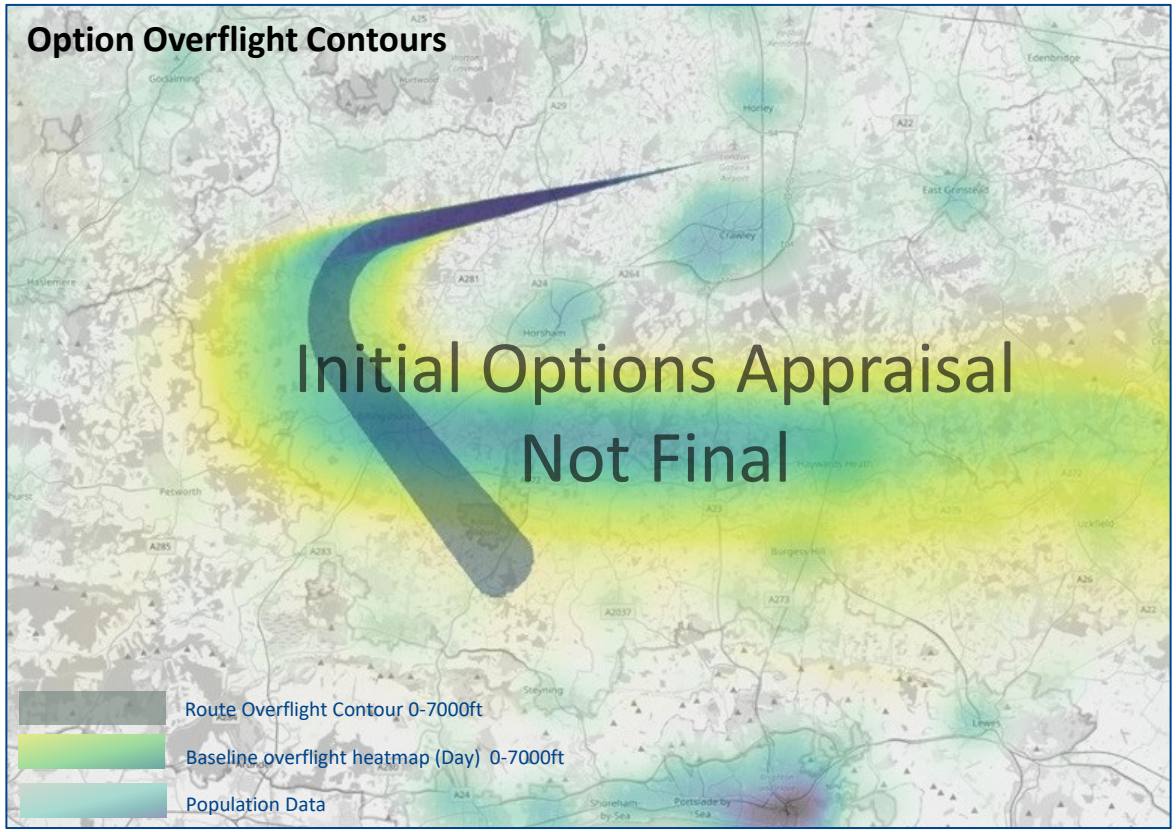
At night, this option would introduce new overflight as aircraft would join final approach under 10nm.

Compared to the baseline, a single PBN arrival transition has the potential to create significant concentration. This will be dependent on the level of vectoring also required which will be explored in further detail as part of Stage 3 should the option progress. It is expected that arrivals will achieve improved CDO performance which has the potential to improve noise.

Airspace Modernisation Strategy

Supports the AMS through the implementation of PBN arrivals which would be for noise and environmental mitigation purposes as set out in the Government's Air Navigation Guidance. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design which could enable simplification, integration, safety and efficiency enhancements.

Overflight Illustration



Safety

No IFP design issues are anticipated with this option. There is precedent for PBN to ILS procedures in the UK.

No safety concerns with the use of a single PBN approach transition onto final approach, assuming adequate separation from all other routes

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAN

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	382	-8
LOAEL (Night)	162	-11
N65 (20)	730	-69
N60 (5)	7260	+4462

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAN

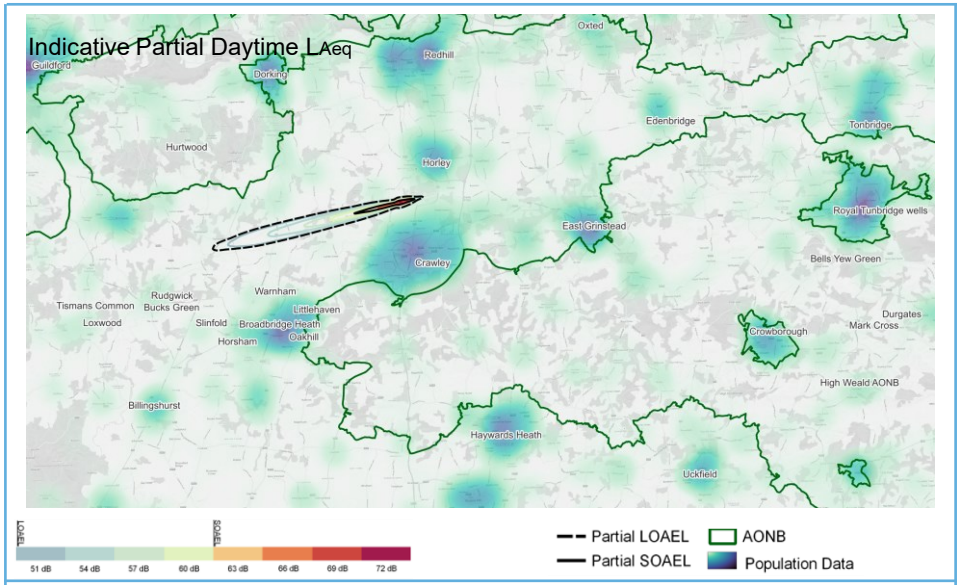
Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAN	10919	36	115	No	0	1	0.1	X Yes
Interdependencies, conflicts & trade-offs								
Option has potential interactions with some departure routes however interactions are minimised with those departure routes that have been evolved to reduce interactions with arrivals.								

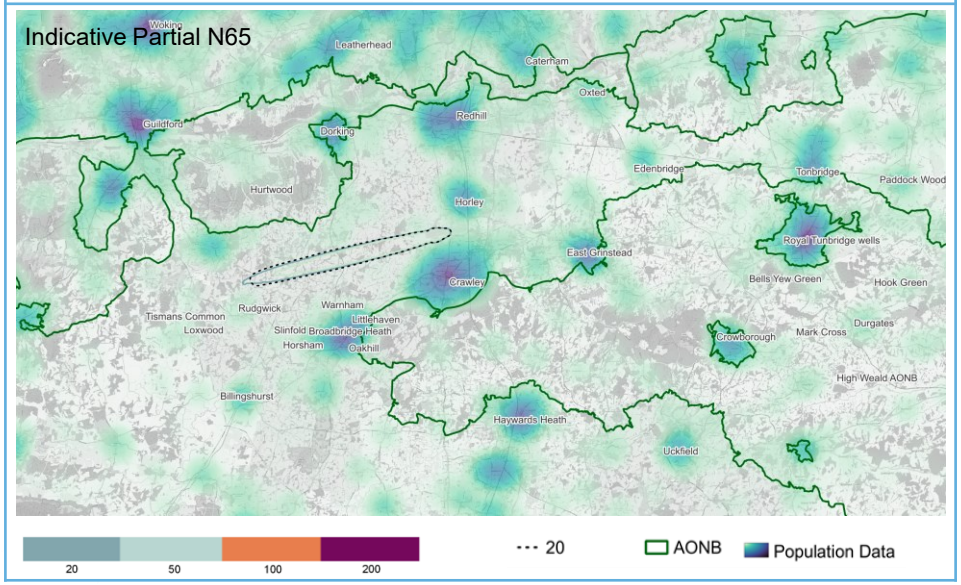
FASI-S ACP Initial Options Appraisal Dashboard

Option

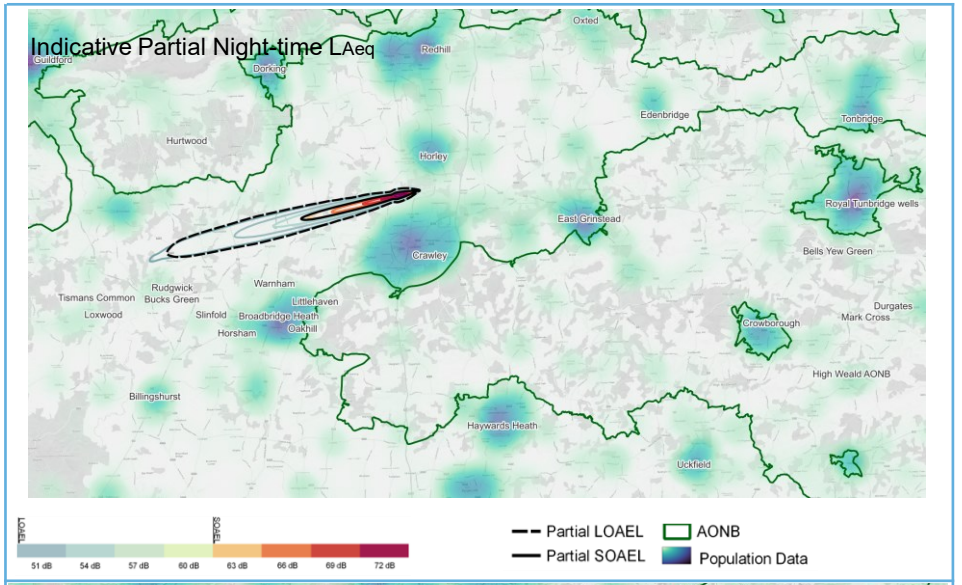
Easterly Arrivals: EAN

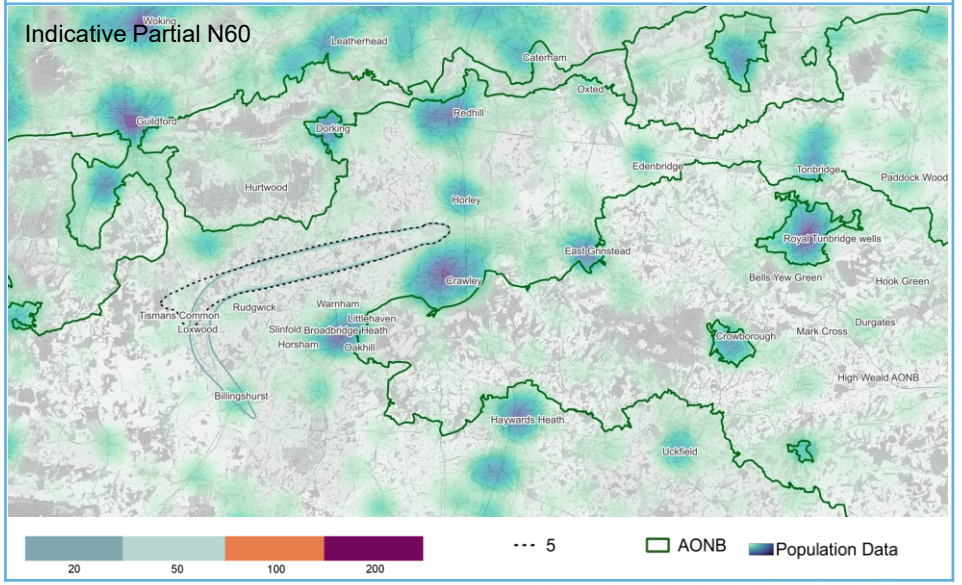
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAO

Description

This PBN arrival option joins the final approach at c.3nm. It aims to follow the areas of high road/rail noise as outlined on DEFRA's noise mapping. This option was developed following stakeholder feedback and aimed to meet DP1, DP2, DP3, DP4, DP5, DP7, DP8, DP9 and the AMS. This arrival option would utilise a type of PBN called RNP-AR. Not all aircraft and crews are able to fly RNP-AR and therefore these routes would need to be operated alongside other arrival options.

Noise

This option uses RNP-AR which impacts the frequency the option can be operated and therefore the amount of benefits/impacts the option can realise.

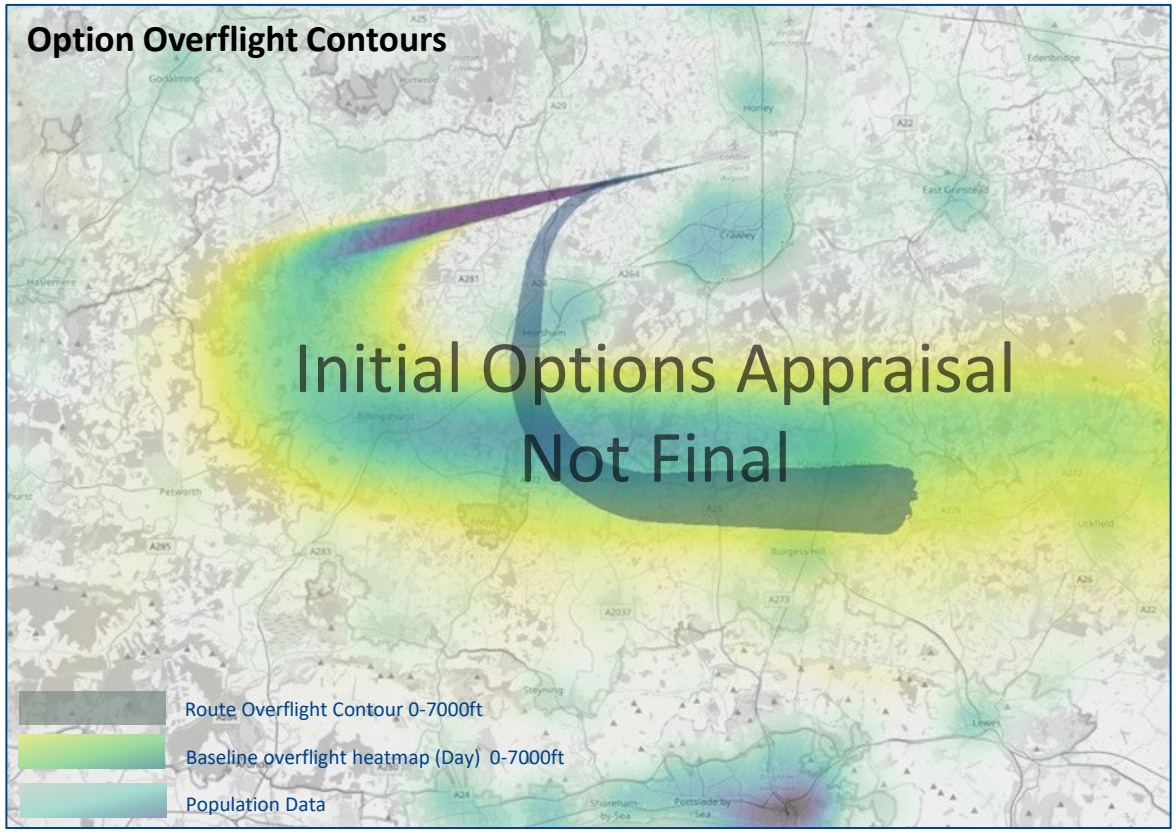
Although it has been developed following stakeholder feedback regarding ambient noise, there is currently no mechanism for assessing ambient noise, and the noise metrics required by CAP1616 and government policy suggest an increase in the number of people adversely affected by noise.

This option is outside of the existing airspace arrangements as it joins final approach closer than today, creating areas of new overflight compared to the baseline. It is expected that arrivals will achieve improved CDO performance.

Airspace Modernisation Strategy

This option is expected to increase population experiencing adverse noise effects whereas there are other options which better align with the AMS objectives by performing either similarly or better than the baseline in terms of population within the indicative partial LOAEL. The option could offer some Fuel Burn / CO2 savings for those aircraft able to operate an RNP-AR approach. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design where they could enable simplification, integration, safety and efficiency enhancements.

Overflight Illustration



Safety

New safety assurances would be required for the RNP-AR arrivals which have not yet been implemented in the UK. The turn onto final approach is close to the regulatory limits and would require further investigation as part of IFP Design and flyability assessment in Stage 3 should this option progress.

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAO

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	447	+57
LOAEL (Night)	132	-41
N65 (20)	7988	+7189
N60 (5)	29072	+26274

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*Impacts identified*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*Impacts identified*

Costs	Qualitative Conclusion
Commercial Airlines Training	*Costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAO

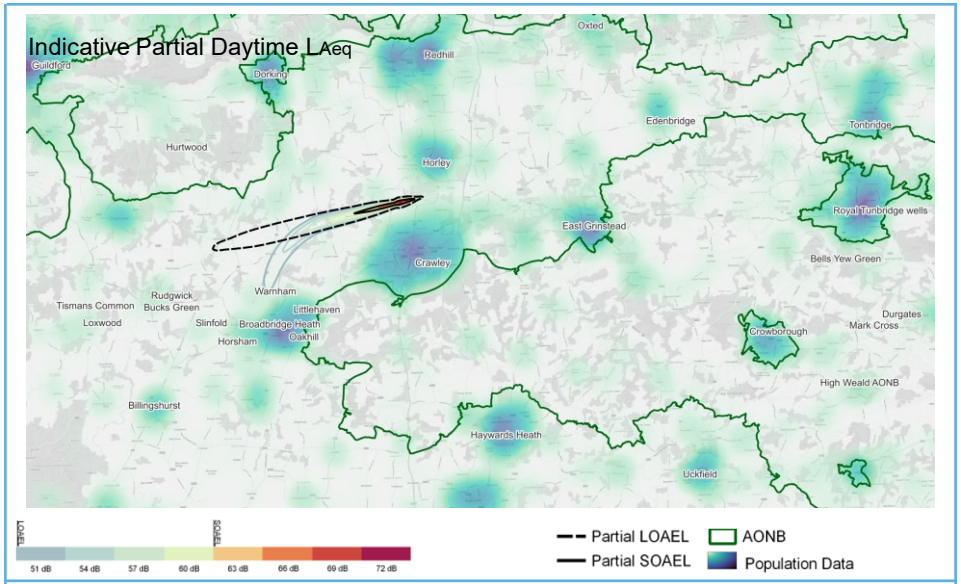
Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAO	42681	10986	14568	No	1.8	0	0	X No
Interdependencies, conflicts & trade-offs								
Option has interactions with some departure routes that would complex to integrate. This is due to the later turn onto final approach which results in the arrivals being in closer proxity to departing traffic where it is difficult to main required separation standards between routes.								

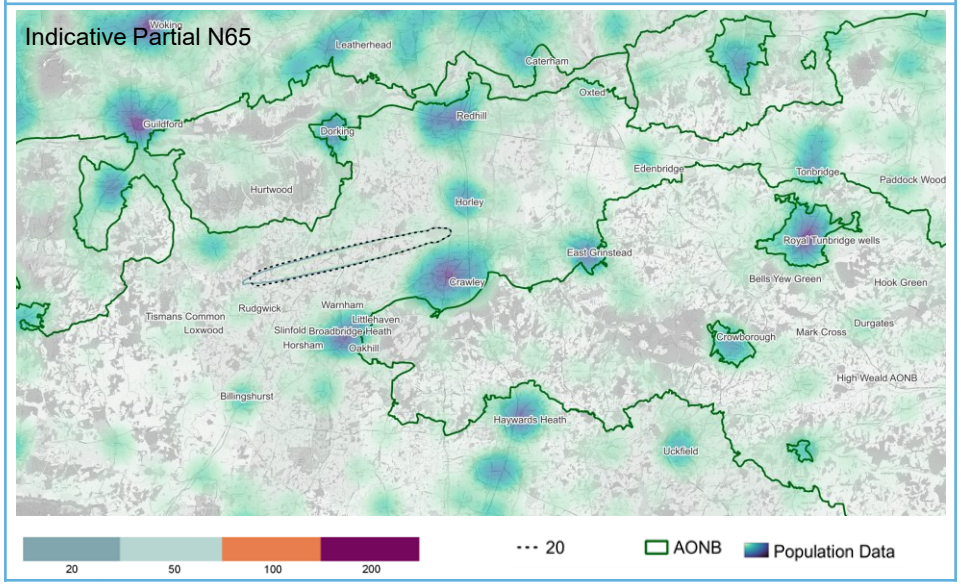
FASI-S ACP Initial Options Appraisal Dashboard

Option

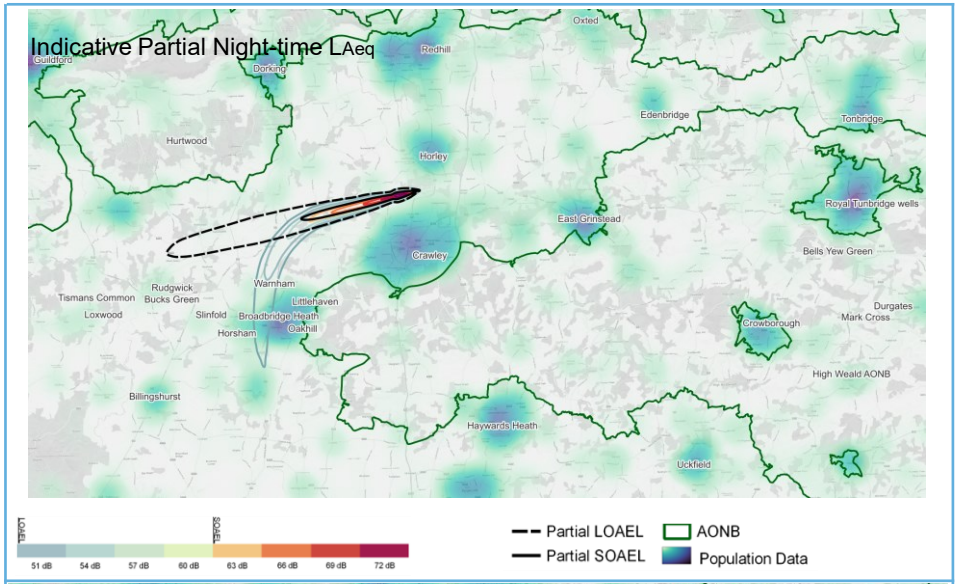
Easterly Arrivals: EAO

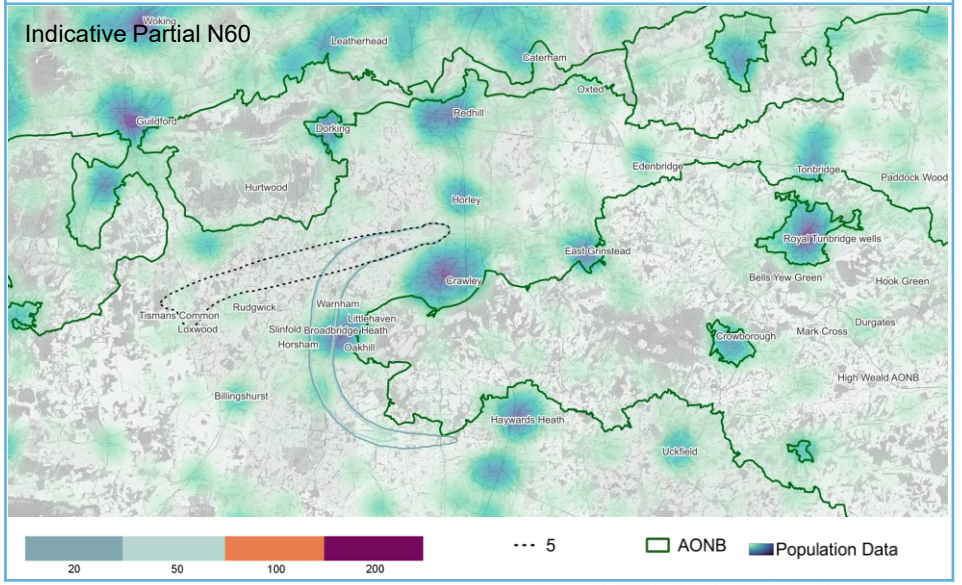
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAP

Description

This PBN arrival option joins the final approach at c.3nm. It aims to follow the areas of high road/rail noise as outlined on DEFRA's noise mapping. This option was developed following stakeholder feedback and aimed to meet DP1, DP2, DP3, DP4, DP5, DP7, DP8, DP9 and the AMS. This arrival option would utilise a type of PBN called RNP-AR. Not all aircraft and crews are able to fly RNP-AR and therefore these routes would need to be operated alongside other arrival options.

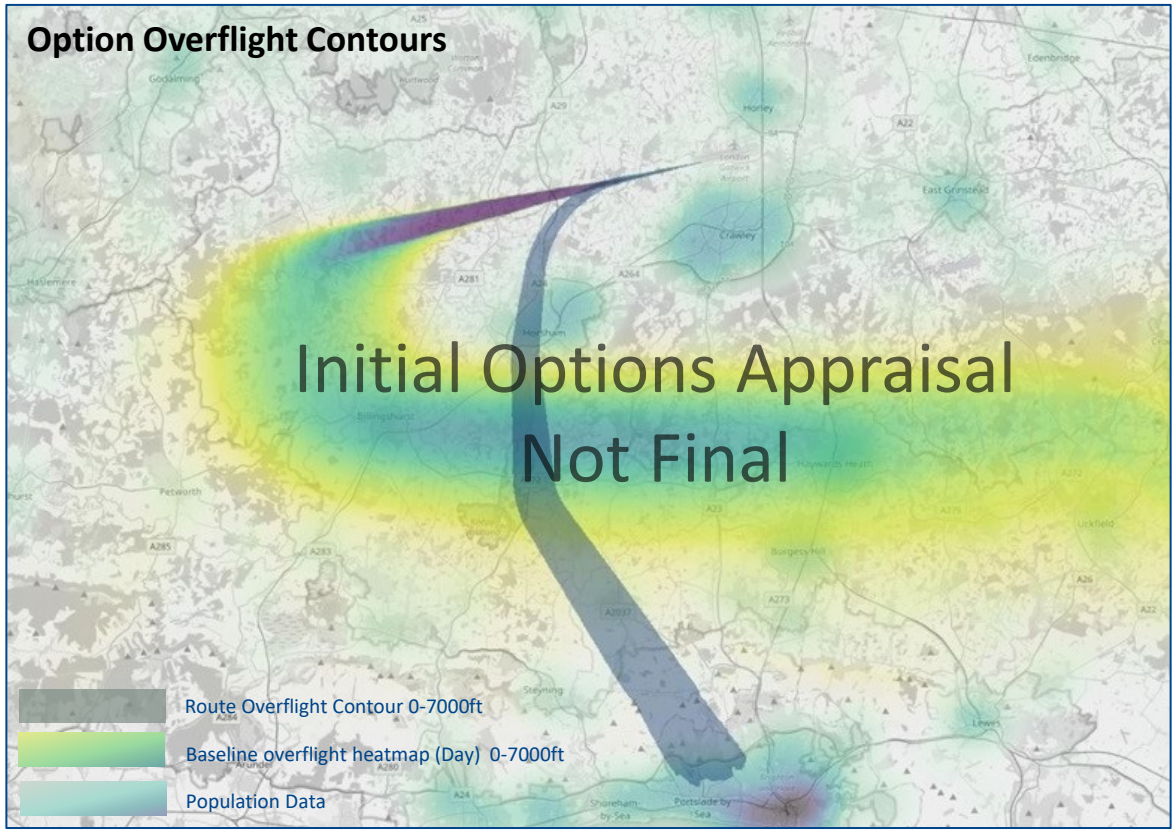
Noise

This option uses RNP-AR which impacts the frequency the option can be operated and therefore the amount of benefits/impacts the option can realise.

Although it has been developed following stakeholder feedback regarding ambient noise, there is currently no mechanism for assessing ambient noise, and the noise metrics required by CAP1616 and government policy suggest a significant increase in the number of people within the N65 and N60 contours.

This option is outside of the existing airspace arrangements as it joins final approach closer than today, creating areas of new overflight compared to the baseline. It is expected that arrivals will achieve improved CDO performance

Overflight Illustration



Airspace Modernisation Strategy

Supports the AMS through the implementation of PBN arrivals which would be for noise and environmental mitigation purposes as set out in the Government's Air Navigation Guidance. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design which could enable simplification, integration, safety and efficiency enhancements.

Safety

New safety assurances would be required for the RNP-AR arrivals which have not yet been implemented in the UK. The turn onto final approach is close to the regulatory limits and would require further investigation as part of IFP Design and flyability assessment in Stage 3 should this option progress.

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAP

Indicative Partial System Performance

Noise	*Population*	Difference to Baseline
LOAEL (Day)	425	35
LOAEL (Night)	132	-41
N65 (20)	8125	+7326
N60 (5)	33376	+30578

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*Impacts identified*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*Impacts identified*

Costs	Qualitative Conclusion
Commercial Airlines Training	*Costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAP

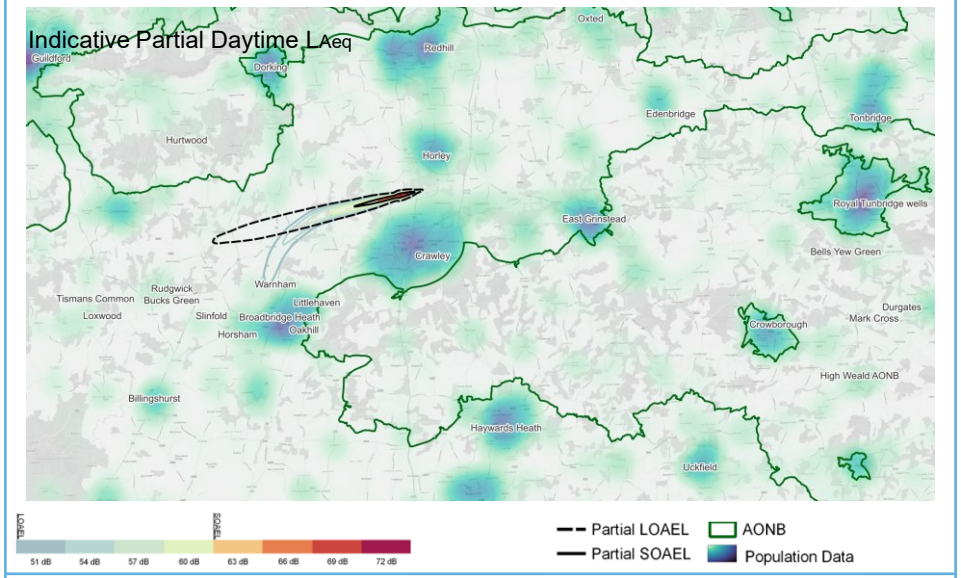
Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAP	45530	33625	33706	No	0	0	0	X No
Interdependencies, conflicts & trade-offs								
Option has interactions with some departure routes that would complex to integrate. This is due to the later turn onto final approach which results in the arrivals being in closer proxity to departing traffic where it is difficult to main required separation standards between routes.								

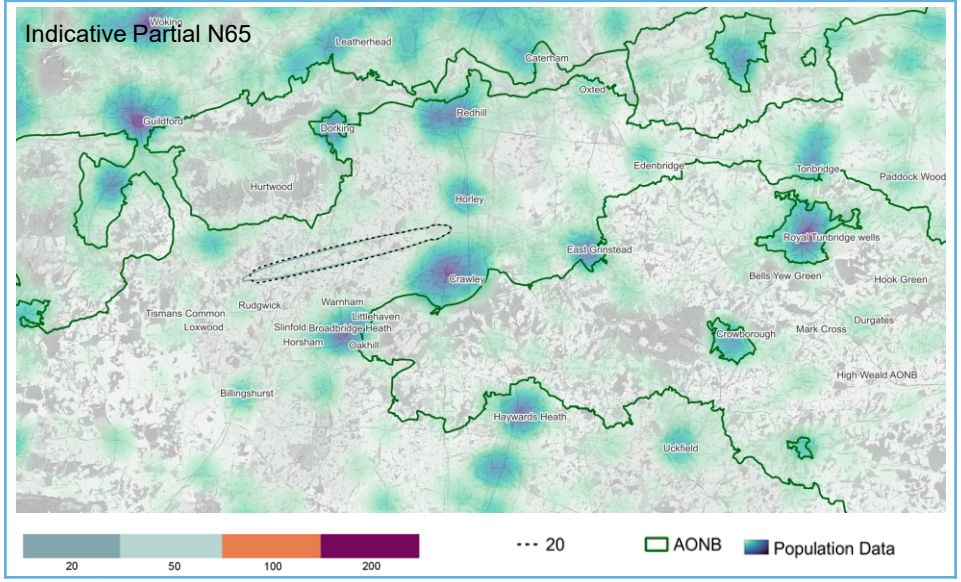
FASI-S ACP Initial Options Appraisal Dashboard

Option

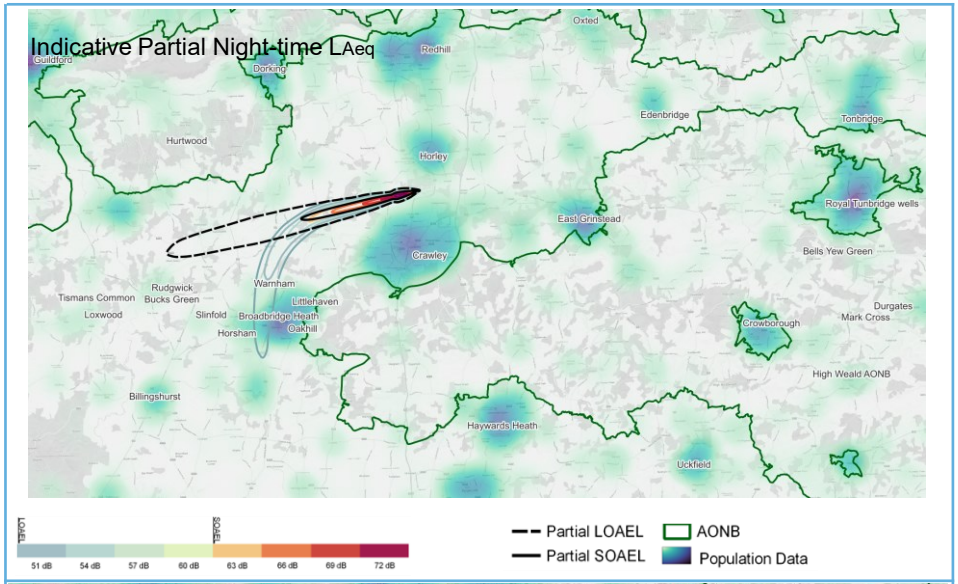
Easterly Arrivals: EAP

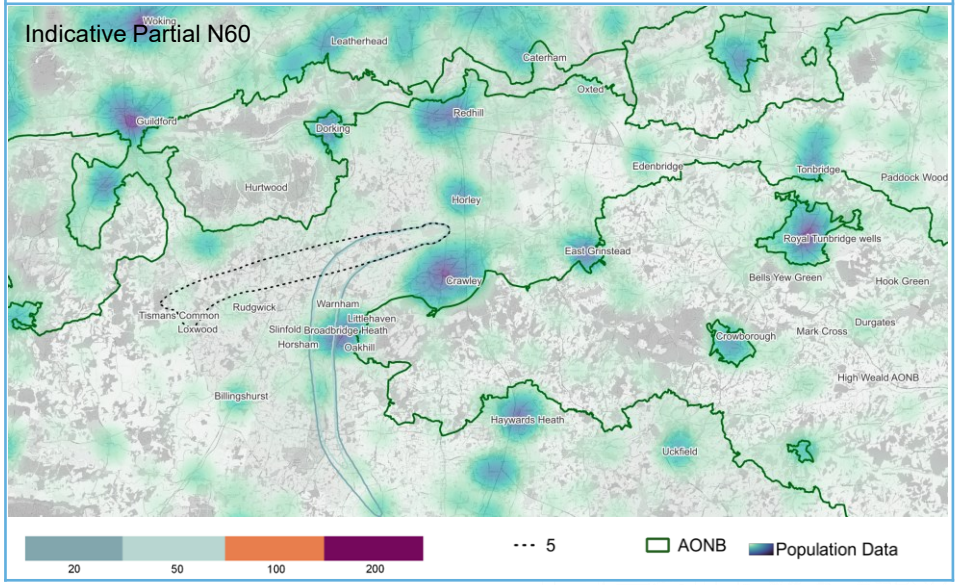
Day





Night





FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAF North

Description

Note these routes are assumed to be available on a tactical basis and have been assessed with an optimistic 10% of arrivals flying them. For more information, please see the methodology section of the Step 2B IOA document.

Noise

This arrival from the north is expected to be operated by a small percentage of traffic and hence they have minimal impacts in terms of LOAEL and N60/N65 noise metrics. Should these routes progress, at Stage 3 further investigation will be undertaken around the integration of these with the wider airspace network, the descent profile expected and the frequency the routes are expected to be operated. This information would inform further quantitative noise analysis.

Airspace Modernisation Strategy

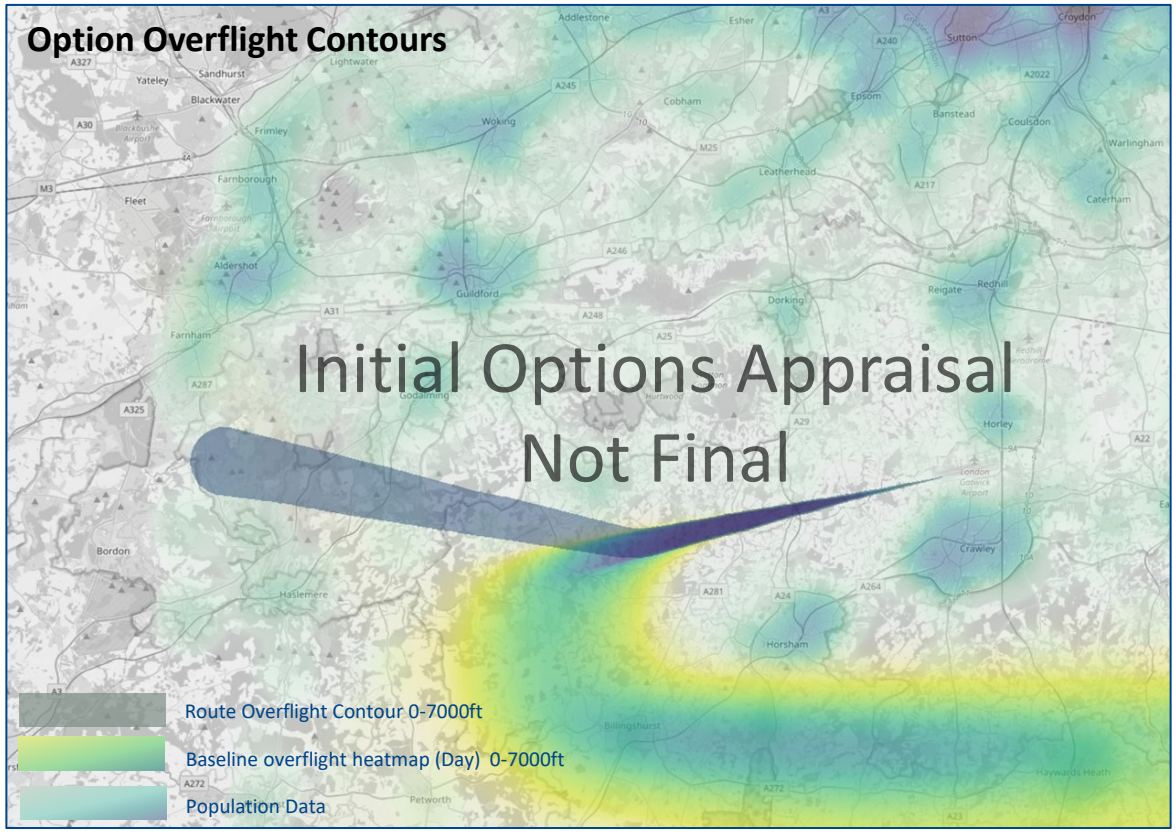
Supports the AMS through the implementation of PBN arrivals which would be for noise and environmental mitigation purposes as set out in the Government's Air Navigation Guidance. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design which could enable simplification, integration, safety and efficiency enhancements.

Safety

No IFP design issues are anticipated with this option.

The more approaches available. the higher the changes of a safety error by ATC or Pilots. In order to mitigate this risk, additional assurance work would be required with a safety argument generated. This expected to be achievable but would require further investigation as part of Stage 3 activity should this option progress.

Overflight Illustration



LONDON GATWICK

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAF North

Indicative Partial System Performance (Note: available on a tactical basis. Estimated 10% of arrival traffic)

Noise	*Population*	Difference to Baseline
LOAEL (Day)	0	n/a
LOAEL (Night)	0	n/a
N65 (20)	0	n/a
N60 (5)	0	n/a

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)	0	0 km²

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAF North

Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAF North	6208	5658	5689	No	0	1	0.1	✓ Yes
Interdependencies, conflicts & trade-offs								
Routes from the north and northwest would only be available on a tactical basis due to significant interactions with Heathrow and Farnborough traffic. Further collaborative work with these airports would be required to investigate this in further detail once shortlists of options are known.								

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAC North

Description

This arrival option offers a PBN route from the north that joins the final approach at c.9.5nm. When developing this option there was a focus on meeting DP3 (limit adverse noise effects), DP6 (Optimise Use of Aircraft Capabilities) and minimising total population overflown whilst also considering DP1, DP2, DP4, DP5, DP7, DP8, DP9 and the AMS.Note these routes are assumed to be available on a tactical basis and have been assessed with an optimistic 10% of arrivals flying them. For more information, please see the methodology section of the Step 2B IOA document.

Noise

This arrival from the north is expected to be operated by a small percentage of traffic and hence they have minimal impacts in terms of LOAEL and N60/N65 noise metrics. Should these routes progress, at Stage 3 further investigation will be undertaken around the integration of these with the wider airspace network, the descent profile expected and the frequency the routes are expected to be operated. This information would inform further quantitative noise analysis.

Airspace Modernisation Strategy

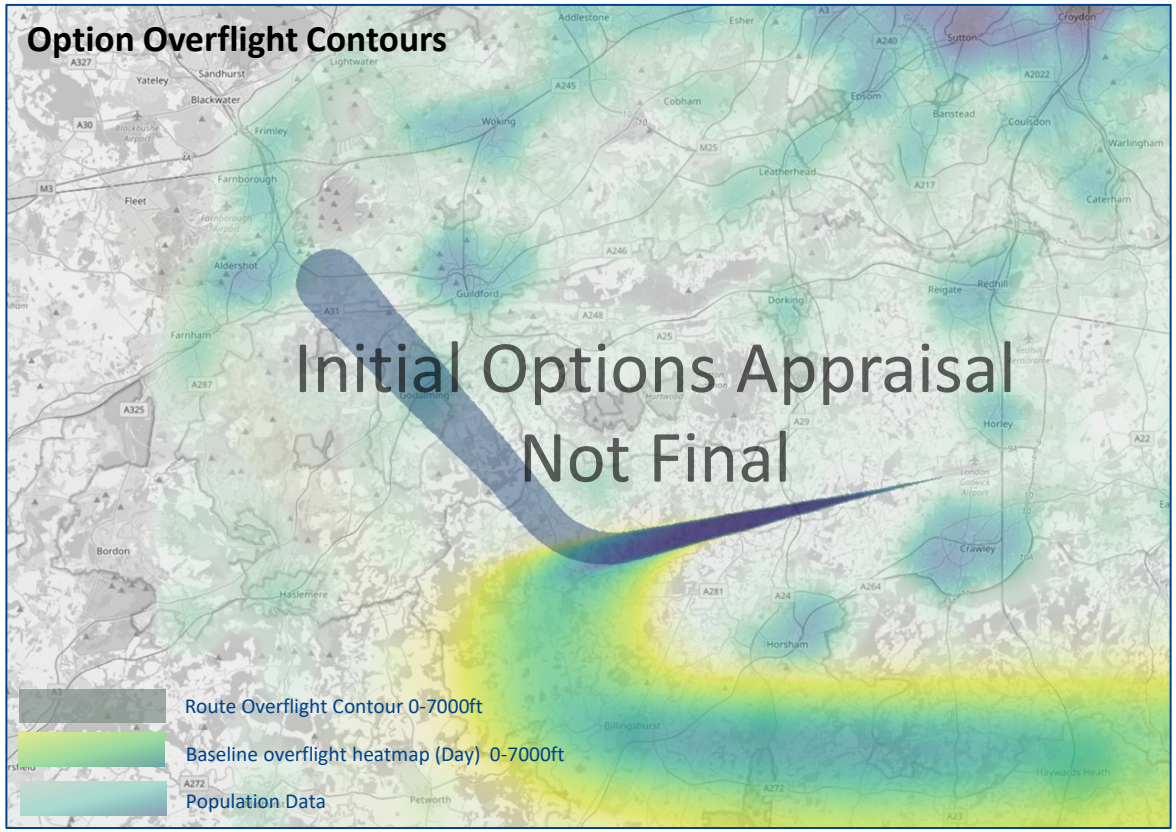
Supports the AMS through the implementation of PBN arrivals which would be for noise and environmental mitigation purposes as set out in the Government's Air Navigation Guidance. PBN arrivals are expected to be used in conjunction with an RMA as part of wider a system design which could enable simplification, integration, safety and efficiency enhancements.

Safety

No IFP design issues are anticipated with this option.

The more approaches available. the higher the changes of a safety error by ATC or Pilots. In order to mitigate this risk, additional assurance work would be required with a safety argument generated. This expected to be achievable but would require further investigation as part of Stage 3 activity should this option progress.

Overflight Illustration



FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAC North

Indicative Partial System Performance (Note: available on a tactical basis. Estimated 10% of arrival traffic)

Noise	*Population*	Difference to Baseline
LOAEL (Day)	0	n/a
LOAEL (Night)	0	n/a
N65 (20)	0	n/a
N60 (5)	0	n/a

Tranquillity	Area *(KM²)*	Difference to Baseline
AONB - N65 (20)		n/a

Emissions	Qualitative Conclusion
Fuel Burn & Greenhouse Gas	*Expected positive compared to baseline*

Economic	Qualitative Conclusion
Commercial Airlines	*No impacts expected*
General Aviation	*No impacts expected*

General Aviation	Qualitative Conclusion
Controlled Airspace Volume	*Not expected to require additional CAS*
GA Access	*No significant impacts anticipated*

Capacity / Resilience	Qualitative Conclusion
Capacity / Resilience	*No change expected*

Costs	Qualitative Conclusion
Commercial Airlines Training	*No costs identified*
Commercial Airlines Other	*No costs identified*
Airport / ANSP Infrastructure	*No costs identified*
Airport / ANSP Operational	*Costs identified*
Airport / ANSP Deployment	*Costs identified*

FASI-S ACP Initial Options Appraisal Dashboard

Option

Easterly Arrivals: EAC North

Option Name	Noise			Air Quality	Tranquillity (Overflight area km²)	Biodiversity (RAMSAR, SEC, SPA, SSSI overflown between 0-1640ft		Continued?
	Overflight Daytime / Nighttime (1) (Population)	Population Newly overflown Daytime (1)	Population Newly overflown Nighttime (1)			Number of sites overflown between 0-1640ft	Area (km2) of sites overflown between 0-1640ft	
EAC North	27241	26667	26684	No	0	1	0.1	✓ Yes
Interdependencies, conflicts & trade-offs								
Routes from the north and northwest would only be available on a tactical basis due to significant interactions with Heathrow and Farnborough traffic. Further collaborative work with these airports would be required to investigate this in further detail once shortlists of options are known.								