

LEEDS BRADFORD AIRPORT FASI AIRSPACE CHANGE PROPOSAL

ACP-2021-066

Stage 2A Submission Document Annex 1 - Design Principle Evaluation

January 2026

Version	Date	
1.0	05/01/26	New document prepared for Stage 2 submission January 2026
1.1	13/01/26	Updates to document to meet CAA gateway requirements. All changes are shown in purple.

Methodology

DP#	DP Statement	DP Component	APPROACH TO EVALUATION	MEETS	PARTIALLY MEETS	DOES NOT MEET
DP1	Importance of Safety- The airspace design and its operation must maintain or where possible enhance current levels of safety	N/A	A qualitative assessment undertaken by SME as to whether the option is expected to maintain or improve safety, whether further, achievable safety assurances will be required or whether there are issues identified which are unlikely to be able to be mitigated	Maintains existing level of safety, or improves on it	Issues identified that will require further safety assurances which seem achievable at this stage	Issues identified that would be unlikely to be able to be mitigated
DP2	Noise- The design should limit, and where practicable reduce, the number of people overflown, the impact of noise to stakeholders on the ground and where possible periods of built-in respite should be considered.	Number of people overflown	A qualitative assessment of whether the option is expected to enable routes to laterally avoid population densities below 7000ft and/or enable quicker climb to above 7000ft which would therefore lead to a reduction in population numbers overflown below 7000ft. Generally the assessments assume that systemised PBN routes will result in less population overflown than the much wider baseline swathes.	Expected to result in overflight of fewer people below 7000ft compared to today's swathe	No Change expected or similar magnitude of impacts	Not expected to result in overflight of fewer people below 7000ft compared to today's swathe
		Impact of Noise	ANG states that the Lowest Observed Adverse Effect Level (LOAEL) is regarded as the point at which adverse effects begin to be seen on a community basis. This qualitative assessment considers whether there are any aspects of each option which may affect the position and size of the LOAEL and if so, whether it could be expected to increase or decrease population numbers within it. This is performed using the extent of the daytime 2018 LAeq 16hr contour	Option could be expected to offer a reduction in the number of people within the LOAEL, subject to detailed modelling	Option could have positive or negative effect but not possible to tell without detailed noise modelling.	Option could be expected to generate an increase in the number of people within the LOAEL, subject to detailed modelling
		Respite considered	Whether or not the route was specifically developed with respite in mind	Option was specifically designed for respite purposes	N/A	Option was not specifically designed for respite purposes
		OVERALL DP EVALUATION (Any mixture of Met, Partly met, not met = Partly met)				
DP3	Tranquility- Where practical, route designs should limit effects upon noise sensitive areas. These may include cultural and historical assets, tranquil or rural areas, sites of care or education and AONBs.	N/A	A qualitative assessment which compares the overflight of AONBs and National Parks below 7000ft of each option compared to the baseline. Assessment does not consider overflight of cultural and historical assets, rural areas or sites of care or education as swathes are too broad	Swathe does not overfly any or overflies less AONB or National Park below 7000ft	Swathe continues to overfly AONB or National Park below 7000ft	Swathe overflies more AONB or National Park below 7000ft
DP4	Emissions and Air Quality- The proposed design should minimise CO2 emissions per flight.	CO2 emissions	A qualitative SME assessment of whether the option can be expected to reduce, increase or not change CO2 emissions compared to the baseline owing to the estimated track miles associated with the option. For this assessment a nominal centreline was drawn down the middle of each option and compared to the baseline nominal centreline. If the track length was within 5% of the baseline, the option was considered to be similar to the baseline.	Option expected to enable more efficient routings, reducing CO2 emissions	No Change or Similar to the baseline	Option expected to enable more inefficient routings, increasing CO2 emissions
		Air Quality	A qualitative statement on whether the options could be expected to affect local air quality. ANG2017 states that due to the effects of mixing and dispersion, emissions from aircraft above 1,000 feet are unlikely to have a significant impact on local air quality. If an option has a change to flightpaths below 1000ft it will be evaluated as 'Partially Met' however further analysis will be required to determine the scale of change to local air quality. If an option has no change to flightpaths below 1000ft it will be evaluated as 'Met'.	No change below 1000ft expected therefore option is unlikely to affect local air quality	Option has potential to affect local air quality below 1000ft	N/A - Not possible to ascertain without detailed modelling
		OVERALL DP EVALUATION (Any mixture of Met, Partly met, not met = Partly met)				
DP5	Airspace Dimensions- The volume and classification of controlled airspace required for LBA should be the minimum necessary to deliver an efficient airspace design, considering the needs of all airspace users	N/A	A qualitative SME assessment of whether the option is expected to reduce, maintain or increase the volume and complexity of Controlled Airspace.	Option likely to allow a reduction in CAS	Options likely to require similar volume of CAS	Option likely to require increased volume of CAS
DP6	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.	N/A	The outcomes of DP5 will be used to evaluate this design principle on the assumption that more CAS could increase complexity and bottle necks in uncontrolled airspace and a reduction in CAS should reduce it. For reduction of complexity inside CAS, see DP8 assessment.	Evaluated in DP5 and met that design principle	Evaluated in DP5 and Partly Met that design principle	Evaluated in DP5 and did not meet that design principle
DP7	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.	N/A	Qualitative assessment by UK APD of whether designing a procedure within the swathe is likely to be achievable within PANS OPS	No cause of concern for APD	Potential to have some IFP design challenges	Not possible within PANS OPS
DP8	Systemisation- The new procedures will integrate with the en-route network, as per the FASI-N programme. If required, the arrival transitions shall integrate with the IAPs, deconflict with the departure procedures, reducing the requirement for tactical coordination.	N/A	Qualitative assessment of whether the departure swathe is in the required direction of NELSA/POL/MAMUL or if the Arrival stack/swathe is in the preferable network location. It is not possible to ascertain whether all departures and arrivals will be deconflicted owing to the significant number of possible combinations at this stage.	Expected to integrate with the future MTMA en-route network	Expected to integrate but not ideal	Not expected to integrate with the future MTMA en-route network
DP9	Operational Cost- Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	N/A	Not possible to ascertain whether there is an adverse "impact on community disturbance" as there is no approved metric for assessing such. It is likely any change will have an impact to some degree but not possible to ascertain if it would be an adverse affect. Fuel efficiency is qualitatively evaluated in DP4	N/A	N/A	N/A
DP10	AMS Realisation- This ACP must serve to further, and not conflict with, the realisation of the AMS.	N/A	The outcomes of DP1, 2, 3, 4, 5, 6, 8 are considered to assess this design principle with the exception of Do Nothing (baseline) which conflicts with the objectives of the AMS	DP1, 2, 3, 4, 5, 6, 8 all met	DP1, 2, 3, 4, 5, 6, 8 mixture of met, partly met and not met	DP1, 2, 3, 4, 5, 6, 8 all not met
DP11	PBN- The new procedures should capitalise on as many of the potential benefits of PBN implementation as are practicable.	N/A	A qualitative SME assessment of whether the option makes use of PBN and if aircraft upgrades may be required (RF or AR)	Expected to be designed to PBN standards that do not require aircraft fleet upgrades	Expected to be designed to PBN standards that may require aircraft fleet upgrades	Does not utilise PBN

Arrivals Design Principle Evaluation

DP#	DP Statement	Component	Baseline	System 1	System 6	System 7	System 8	System 9	System 10	System 11	RNP AR RW14	RNP AR RW32	
DP1	Importance of Safety- The airspace design and its operation must maintain or where possible enhance current levels of safety	N/A	Proven to be safe	Change will require new safety case but no show-stoppers identified at this stage	Change will require new safety case but no show-stoppers identified at this stage	Change will require new safety case but no show-stoppers identified at this stage	Change will require new safety case but no show-stoppers identified at this stage	Change will require new safety case but no show-stoppers identified at this stage	Change will require new safety case but no show-stoppers identified at this stage	Change will require new safety case but no show-stoppers identified at this stage	Change will require new safety case but no show-stoppers identified at this stage	Change will require new safety case but no show-stoppers identified at this stage	
DP2	Noise- The design should limit, and where practicable reduce, the number of people overflown, the impact of noise to stakeholders on the ground and where possible periods of built-in respite should be considered.	Number of people overflown	No Change expected	Systemised PBN approach transitions will overfly fewer people than today's swathe	Systemised PBN approach transitions will overfly fewer people than today's swathe	Systemised PBN approach transitions will overfly fewer people than today's swathe	Systemised PBN approach transitions will overfly fewer people than today's swathe	Systemised PBN approach transitions will overfly fewer people than today's swathe	Systemised PBN approach transitions will overfly fewer people than today's swathe	Systemised PBN approach transitions will overfly fewer people than today's swathe	Systemised PBN approach transitions/AR procedures will overfly fewer people than today's swathe	Systemised PBN approach transitions/AR procedures will overfly fewer people than today's swathe	
		Impact of Noise	Baseline option not expected to have any effect on the LOAEL as there will be no change.	Option not expected to have any effect on the LOAEL as the LOAEL doesn't extend as far out as the final approach joining point	Option not expected to have any effect on the LOAEL as the LOAEL doesn't extend as far out as the final approach joining point	Option not expected to have any effect on the LOAEL as the LOAEL doesn't extend as far out as the final approach joining point	Option not expected to have any effect on the LOAEL as the LOAEL doesn't extend as far out as the final approach joining point	Option not expected to have any effect on the LOAEL as the LOAEL doesn't extend as far out as the final approach joining point	Option not expected to have any effect on the LOAEL as the LOAEL doesn't extend as far out as the final approach joining point	Option not expected to have any effect on the LOAEL as the LOAEL doesn't extend as far out as the final approach joining point	Option not expected to have any effect on the LOAEL as the LOAEL doesn't extend as far out as the final approach joining point	Option could have positive or negative effect but not possible to tell without detailed noise modelling.	Option could have positive or negative effect but not possible to tell without detailed noise modelling.
		Respite considered	Option was not specifically designed for respite purposes	Option was not specifically designed for respite purposes	Option was not specifically designed for respite purposes	Option was not specifically designed for respite purposes	Option was not specifically designed for respite purposes	Option was not specifically designed for respite purposes	Option was not specifically designed for respite purposes	Option was not specifically designed for respite purposes	Option was not specifically designed for respite purposes	Option was not specifically designed for respite purposes	Option was not specifically designed for respite purposes
		OVERALL											
DP3	Tranquility- Where practical, route designs should limit effects upon noise sensitive areas. These may include cultural and historical assets, tranquil or rural areas, sites of care or education and AONBs.	N/A	RWY 14 arrivals continue to overfly Yorkshire Dales NP and Nidderdale AONB below 7000ft	RWY 14 arrivals continue to overfly Yorkshire Dales NP and Nidderdale AONB below 7000ft	RWY 14 arrivals continue to overfly Yorkshire Dales NP and Nidderdale AONB below 7000ft	RWY 14 arrivals continue to overfly Yorkshire Dales NP and Nidderdale AONB below 7000ft	RWY 14 arrivals continue to overfly Yorkshire Dales NP and Nidderdale AONB below 7000ft	RWY 14 arrivals continue to overfly Yorkshire Dales NP and Nidderdale AONB below 7000ft	RWY 14 arrivals continue to overfly Yorkshire Dales NP and Nidderdale AONB below 7000ft	RWY 14 arrivals continue to overfly Yorkshire Dales NP and Nidderdale AONB below 7000ft	RWY 14 arrivals continue to overfly Yorkshire Dales NP and Nidderdale AONB below 7000ft	Swathe does not overfly any AONB or National Parks below 700ft	
DP4	Emissions and Air Quality- The proposed design should minimise CO2 emissions per flight.	CO2 emissions	No Change	Arrivals would be unlikely to fly to the overhead before being positioned onto final approach therefore it is unlikely there is significant change to track miles flown by LBA arrivals in this option compared to the baseline	This option assumes only arrivals from the SE would flight plan to the GOLES hold and the remainder would continue to flight plan to the LBA hold. However expected to enable more efficient routings for some arrivals owing to straight in approaches to either end	This option assumes arrivals from the SE would flight plan to the GOLES hold, arrivals from the North would flight plan to the NW hold and arrivals from the SW would continue to flight plan to the LBA. However expected to enable more efficient routings for some arrivals owing to straight in approaches to either end	This option assumes all arrivals would flight plan via either the NW hold or GOLES which would result in an increased fuel uplift and associated CO2 emissions even with some more straight in approaches being available	This option assumes arrivals from the SE would flight plan to GOLES, arrivals from the SW to UDDER and arrivals from the north continue to flight plan to LBA. There could be a small reduction in fuel uplift for arrivals from the SW compared to the baseline but not certain	This option assumes only arrivals from the SE would flight plan to the GOLES hold and the remainder would continue to flight plan to the LBA hold. However expected to enable more efficient routings for some arrivals owing to straight in approaches to either end	This option assumes all arrivals would flight plan via either the NW hold or GOLES which would result in an increased fuel uplift and associated CO2 emissions even with some more straight in approaches being available	This option could enable a reduction in track miles flown for RNP-AR approved operators, resulting in a reduction on fuel burn and CO2 emissions	This option is not expected to enable any CO2 reductions as the RNP-AR flight path is not to enable shorter approaches but to enable the final approach to avoid certain populations.	
		Air Quality	No change below 1000ft expected therefore option is unlikely to affect local air quality	No change below 1000ft expected therefore option is unlikely to affect local air quality	No change below 1000ft expected therefore option is unlikely to affect local air quality	No change below 1000ft expected therefore option is unlikely to affect local air quality	No change below 1000ft expected therefore option is unlikely to affect local air quality	No change below 1000ft expected therefore option is unlikely to affect local air quality	No change below 1000ft expected therefore option is unlikely to affect local air quality	No change below 1000ft expected therefore option is unlikely to affect local air quality	No change below 1000ft expected therefore option is unlikely to affect local air quality	No change below 1000ft expected therefore option is unlikely to affect local air quality	No change below 1000ft expected therefore option is unlikely to affect local air quality
		OVERALL											
DP5	Airspace Dimensions- The volume and classification of controlled airspace required for LBA should be the minimum necessary to deliver an efficient airspace design, considering the needs of all airspace users	N/A	No Change	The RWY32 approaches as illustrated in the option would likely require increases to the size of the CTR, CTAL and CTAS. The RWY14 approaches as illustrated in the option would likely require increases to the size of the CTR and CTAS.	The RWY32 approaches as illustrated in the option would require considerable increases to the size of the CTR, CTAL and CTAS and/or creation of new CTAS. The RWY14 approaches as illustrated in the option would require considerable increases to the size of the CTR and CTAS and/or creation of new CTAS.	The RWY32 approaches as illustrated in the option would require considerable increases to the size of the CTR, CTAL and CTAS and/or creation of new CTAS. The RWY14 approaches as illustrated in the option would require considerable increases to the size of the CTR and CTAS and/or creation of new CTAS.	The RWY32 approaches as illustrated in the option would require considerable increases to the size of the CTR, CTAL and CTAS and/or creation of new CTAS. The RWY14 approaches as illustrated in the option would require considerable increases to the size of the CTR and CTAS and/or creation of new CTAS.	The RWY32 approaches as illustrated in the option would likely require increases to the size of the CTR, CTAL and CTAS. The RWY14 approaches as illustrated in the option would likely require increases to the size of the CTR and CTAS.	The RWY32 approaches as illustrated in the option would likely require increases to the size of the CTR, CTAL and CTAS. The RWY14 approaches as illustrated in the option would likely require increases to the size of the CTR and CTAS.	The RWY32 approaches as illustrated in the option would require considerable increases to the size of the CTR, CTAL and CTAS and/or creation of new CTAS. The RWY14 approaches as illustrated in the option would require considerable increases to the size of the CTR and CTAS and/or creation of new CTAS.	The RWY14 approach as illustrated in the option would require extension of CTR to the east.	Options likely to require similar volume of CAS	
DP6	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.	N/A	No Change	The RWY32 approaches as illustrated in the option would likely require increases to the size of the CTR, CTAL and CTAS. The RWY14 approaches as illustrated in the option would likely require increases to the size of the CTR and CTAS.	The RWY32 approaches as illustrated in the option would require considerable increases to the size of the CTR, CTAL and CTAS and/or creation of new CTAS. The RWY14 approaches as illustrated in the option would require considerable increases to the size of the CTR and CTAS and/or creation of new CTAS.	The RWY32 approaches as illustrated in the option would require considerable increases to the size of the CTR, CTAL and CTAS and/or creation of new CTAS. The RWY14 approaches as illustrated in the option would require considerable increases to the size of the CTR and CTAS and/or creation of new CTAS.	The RWY32 approaches as illustrated in the option would require considerable increases to the size of the CTR, CTAL and CTAS and/or creation of new CTAS. The RWY14 approaches as illustrated in the option would require considerable increases to the size of the CTR and CTAS and/or creation of new CTAS.	The RWY32 approaches as illustrated in the option would likely require increases to the size of the CTR, CTAL and CTAS. The RWY14 approaches as illustrated in the option would likely require increases to the size of the CTR and CTAS.	The RWY32 approaches as illustrated in the option would likely require increases to the size of the CTR, CTAL and CTAS. The RWY14 approaches as illustrated in the option would likely require increases to the size of the CTR and CTAS.	The RWY32 approaches as illustrated in the option would require considerable increases to the size of the CTR, CTAL and CTAS and/or creation of new CTAS. The RWY14 approaches as illustrated in the option would require considerable increases to the size of the CTR and CTAS and/or creation of new CTAS.	The RWY14 approach as illustrated in the option would require extension of CTR to the east.	Options likely to require similar volume of CAS	
DP7	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.	N/A	No cause of concern for APD	No cause of concern for APD	No cause of concern for APD	No cause of concern for APD	No cause of concern for APD	No cause of concern for APD	No cause of concern for APD	No cause of concern for APD	No cause of concern for APD	No cause of concern for APD	
DP8	Systemisation- The new procedures will integrate with the en-route network, as per the FAS-I-N programme. If required, the arrival transitions shall integrate with the IAPs, deconflict with the departure procedures, reducing the requirement for tactical coordination.	N/A	Not expected to integrate with the future MTMA en-route network	Expected to integrate but not ideal owing to absence of terminal holding capacity	Expected to integrate with the future MTMA en-route network	Expected to integrate with the future MTMA en-route network	Expected to integrate with the future MTMA en-route network	Expected to integrate with the future MTMA en-route network	Expected to integrate with the future MTMA en-route network	Expected to integrate with the future MTMA en-route network	Expected to integrate with the future MTMA en-route network	Expected to integrate with the future MTMA en-route network	
DP9	Operational Cost- Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
DP10	AMS Realisation- This ACP must serve to further, and not conflict with, the realisation of the AMS.	N/A	Doing nothing conflicts with the objectives of the AMS	DP1, 2, 3, 4, 5, 6, 8 mixture of met, partly met and not met	DP1, 2, 3, 4, 5, 6, 8 mixture of met, partly met and not met	DP1, 2, 3, 4, 5, 6, 8 mixture of met, partly met and not met	DP1, 2, 3, 4, 5, 6, 8 mixture of met, partly met and not met	DP1, 2, 3, 4, 5, 6, 8 mixture of met, partly met and not met	DP1, 2, 3, 4, 5, 6, 8 mixture of met, partly met and not met	DP1, 2, 3, 4, 5, 6, 8 mixture of met, partly met and not met	DP1, 2, 3, 4, 5, 6, 8 mixture of met, partly met and not met	DP1, 2, 3, 4, 5, 6, 8 mixture of met, partly met and not met	
DP11	PBN- The new procedures should capitalise on as many of the potential benefits of PBN implementation as are practicable.	N/A	Does not utilise PBN	Expected to be designed to PBN standards that do not require aircraft fleet upgrades	Expected to be designed to PBN standards that do not require aircraft fleet upgrades	Expected to be designed to PBN standards that do not require aircraft fleet upgrades	Expected to be designed to PBN standards that do not require aircraft fleet upgrades	Expected to be designed to PBN standards that do not require aircraft fleet upgrades	Expected to be designed to PBN standards that do not require aircraft fleet upgrades	Expected to be designed to PBN standards that do not require aircraft fleet upgrades	Expected to be designed to PBN standards that may require aircraft fleet upgrades though noting RNP-AR is unlikely to be mandatory as other non-AR procedures will exist	Expected to be designed to PBN standards that may require aircraft fleet upgrades though noting RNP-AR is unlikely to be mandatory as other non-AR procedures will exist	