ACP Stage 2 Stakeholder Workshop

Leeds Bradford Airport FASI(N) ACP

Section 1 - Overview

ACP Stage 2 Options Development

- Design Principles
- Methodology
- Departures
- Arrivals
- What We Need From You
- Questions

Leeds Bradford Airport Final Design Principles Summary Table

DP Number	Design Principle	DP Number	Design Principle
1	Importance of Safety – The airspace design and its operation must maintain or where possible, enhance current levels of safety.	7	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.
2	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.	8	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 Instrument Approach Procedures (IAPs), deconflict with the departure procedures, reducing the requirement for tactical coordination.
3	Tranquillity - Where practical, route designs should limit effects upon noise sensitive areas. These may include cultural or historic assets, tranquil or rural areas, sites of care or education and AONB's.	9	Operational Cost – Provided it does not have an adverse impact of community disturbance, procedures should be designed to optimise fuel efficiency
4	Emissions and Air Quality – The proposed design should minimise CO2 emissions per flight.	10	AMS Realisation – This ACP must serve to further, and not conflict with, the realisation of the AMS.
5	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.	11	PBN – The new procedures should capitalise on as many of the potential benefits of PBN implementation as are practicable.
6	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.		

Options Development Methodology

- The Options have been conceived with no pre conceptions
- The Options developed for the departures are swathes. The areas within which a final departure or arrival nominal track might ultimately be designed.
- The Options developed for the arrivals are general directions of travel based on a variety of different hold and transition options.

NOTE - This workshop is not a consultation on final routes, but an assessment of high-level concepts against the Design Principles you helped us develop.

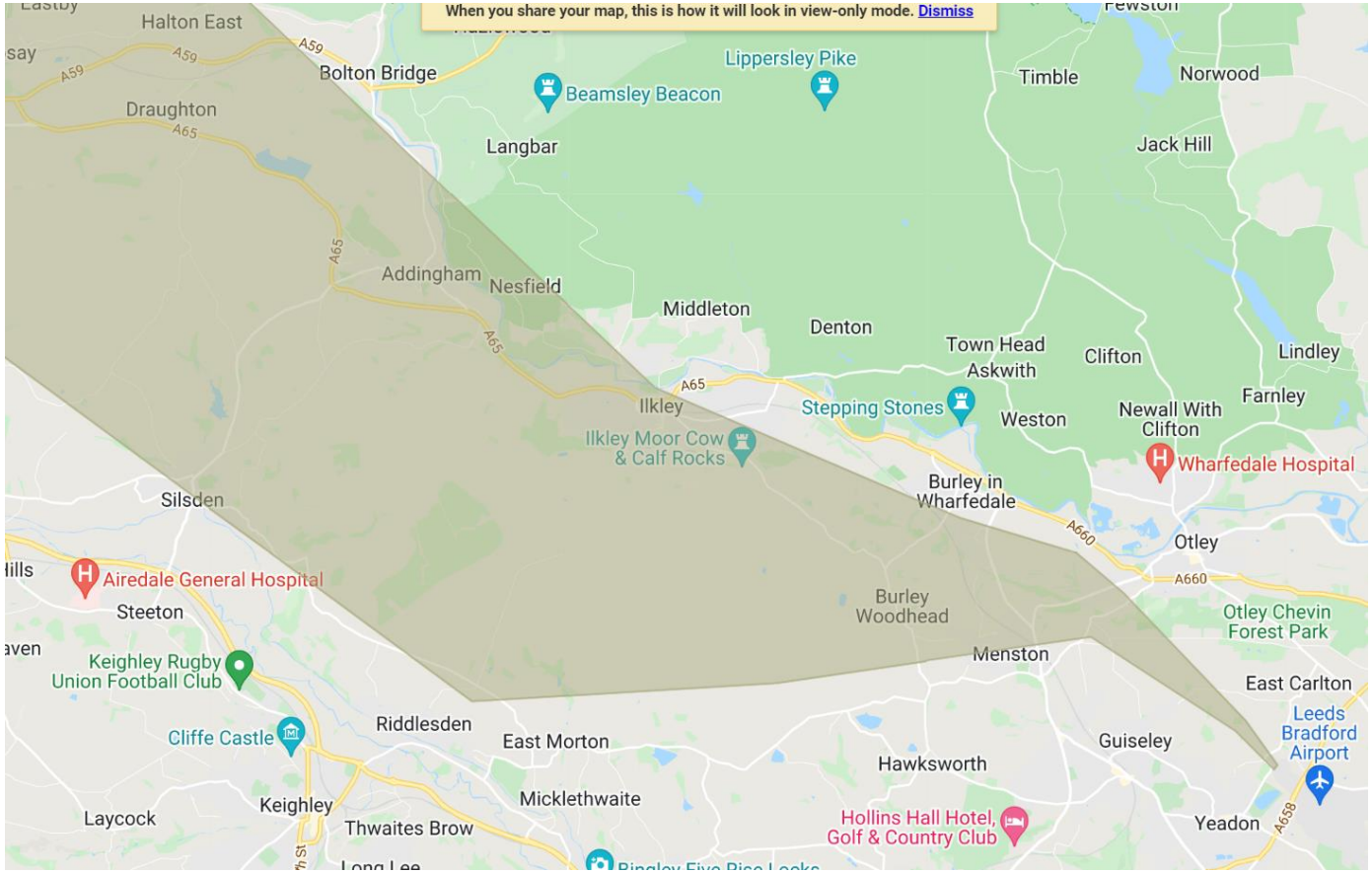
Departures

Runway 32 – North West

Runway 32 – North West

Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
32NW-A											

Runway 32 – North West



Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
32NW-A											

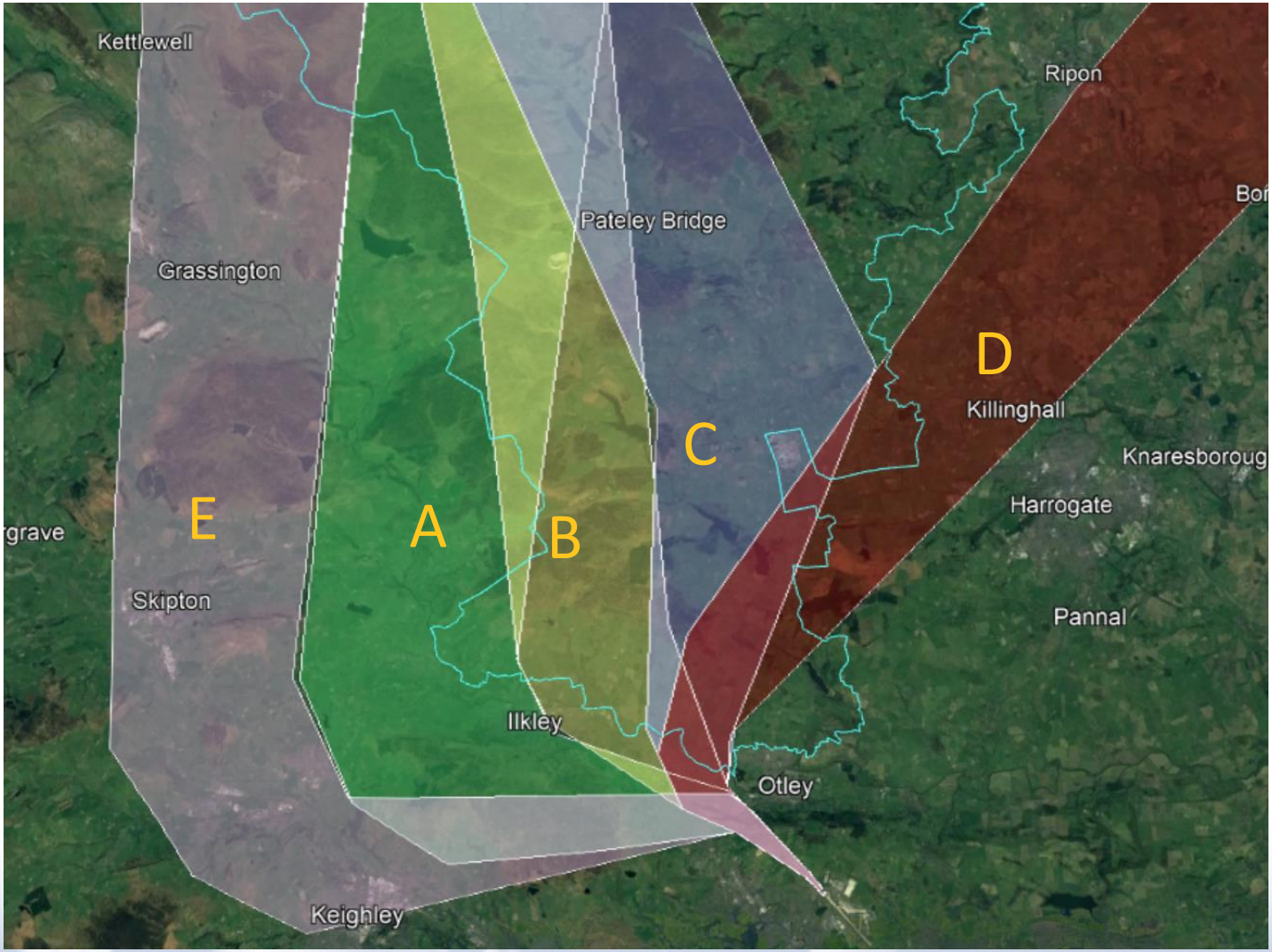
Runway 32 – North West

Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
32NW-A											

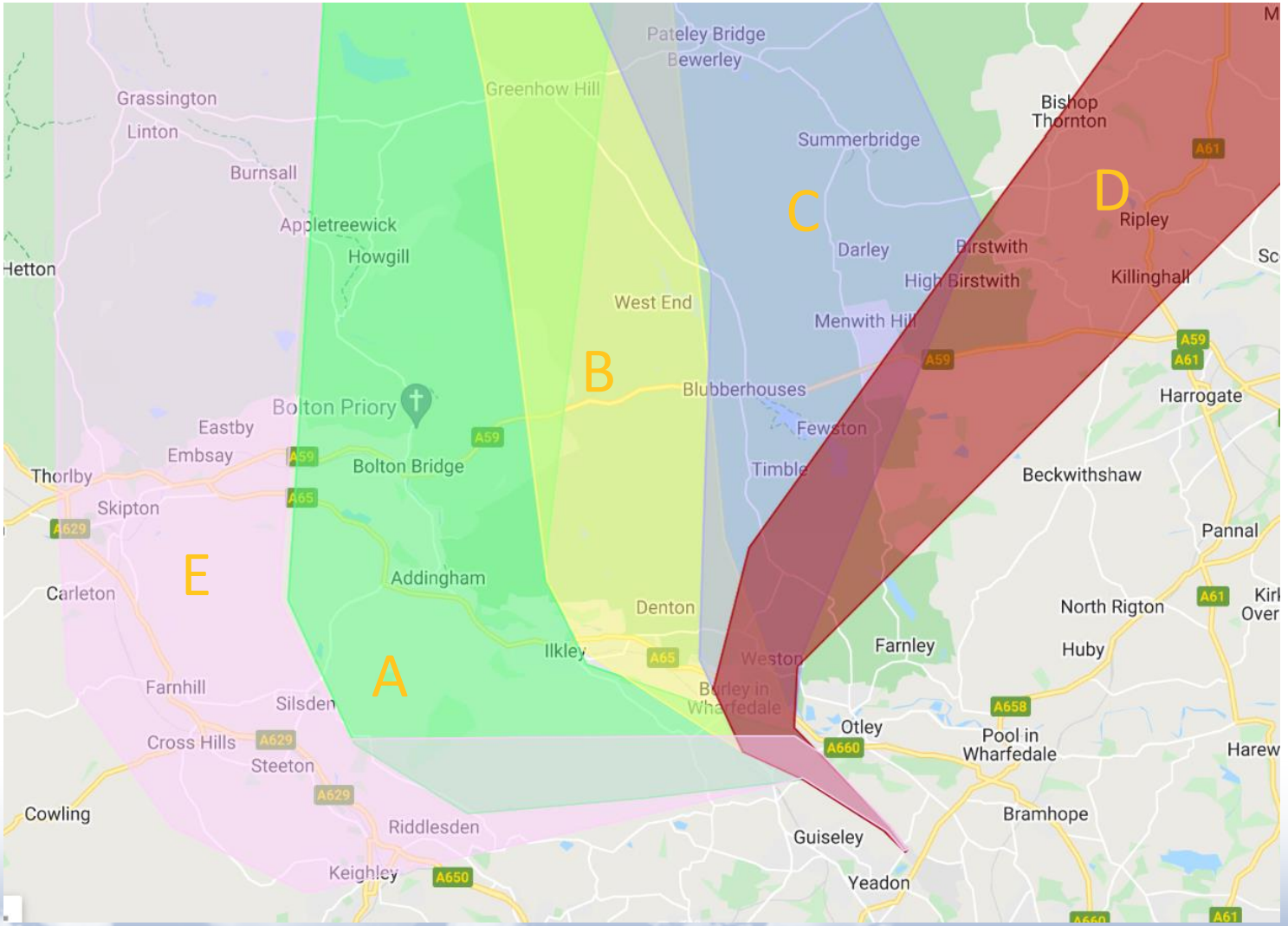
Runway 32 – North East

Departures to the North-East off RW32, turn after adherence to the Noise Abatement Procedures (NAPs) towards GASKO.

Runway 32 – North East



Runway 32 – North East



Runway 32 – North East

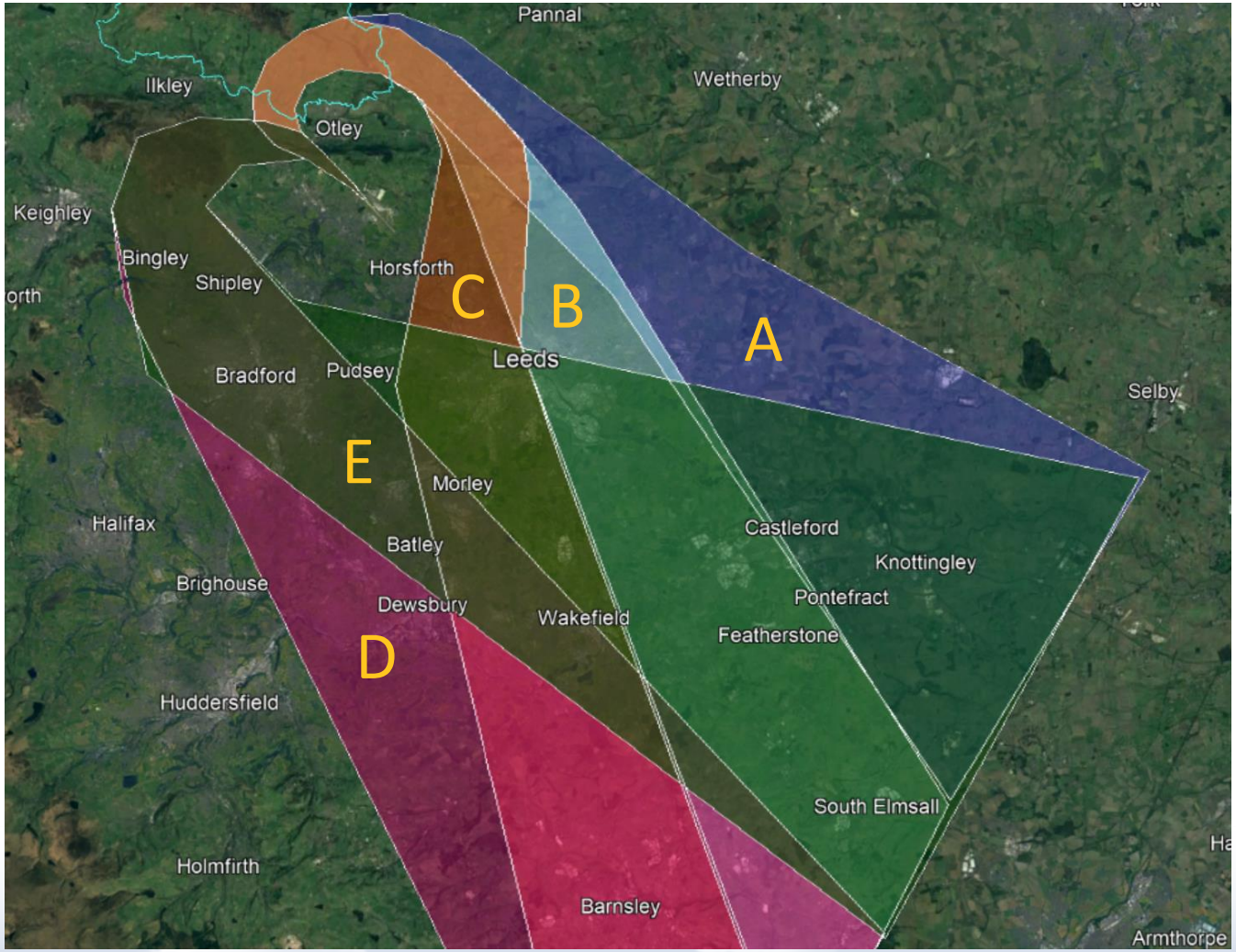
32 North East Deps DP Evaluation

Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
32NE-A											
32NE-B		Overflies Ilkley									
32NE-C	Currently class G Area of IAA with multiple Fast Jet operations	Burley in Wharfedale			Would potentially require a greater volume of CAS to be established						
32NE-D	Currently class G Area of IAA with multiple Fast Jet operations	Burley in Wharfedale			Would require a greater volume of CAS to be established						
32NE-E											

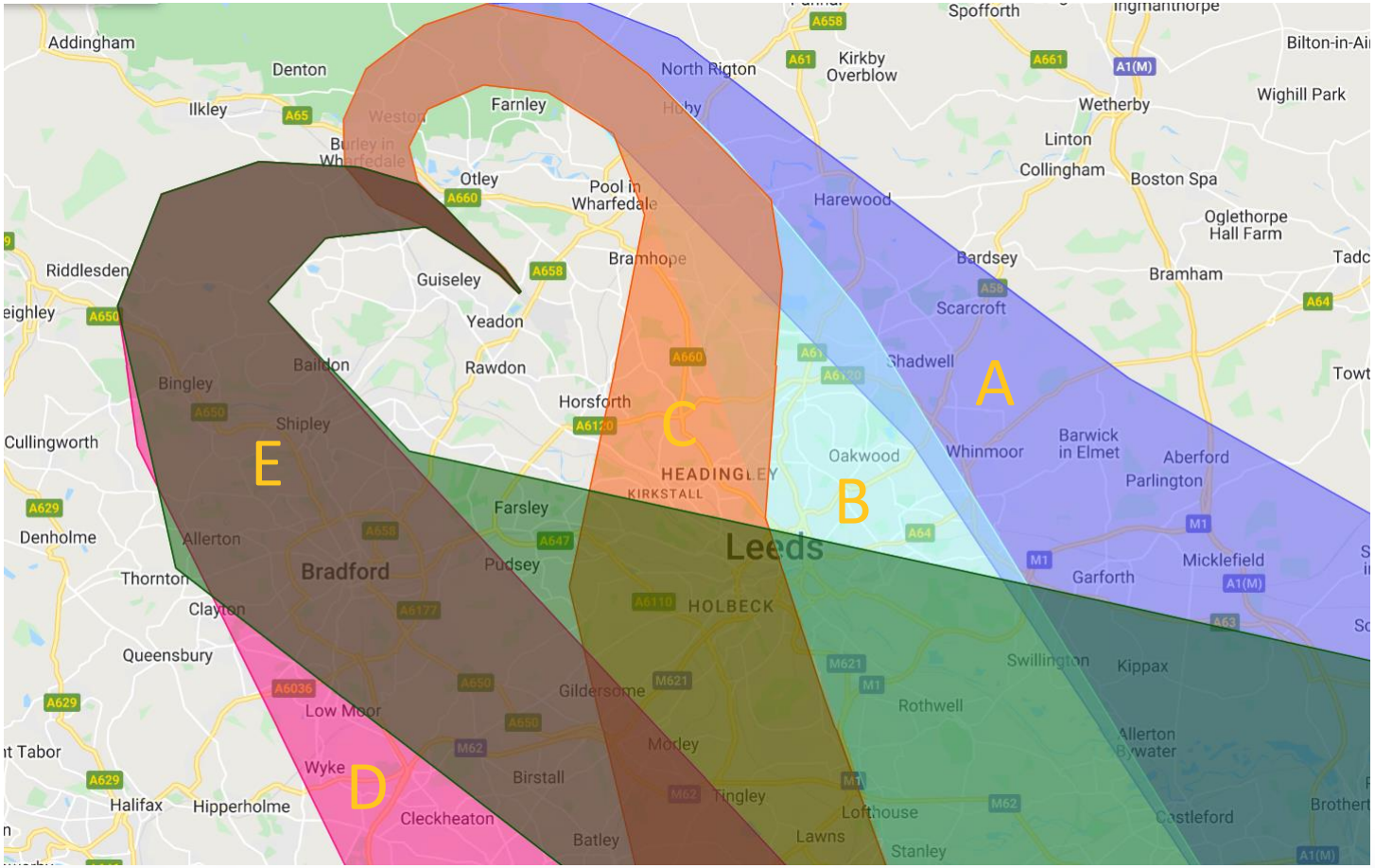
Runway 32 – South East

Existing departures to the South-East off RW32 turn left once they have adhered to the NPRs and route towards DOPEK and LAMIX.

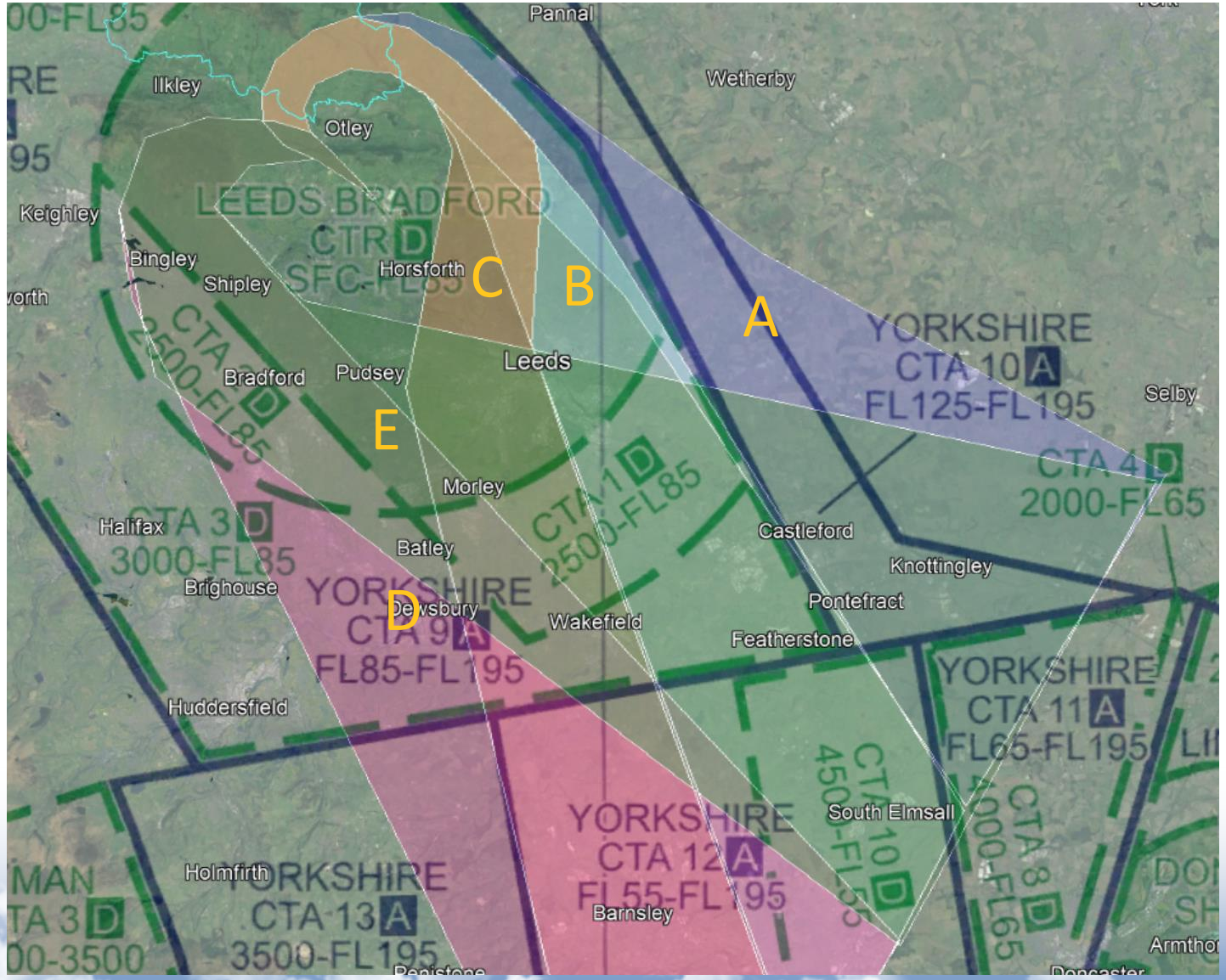
Runway 32 – South East



Runway 32 – South East



Runway 32 – South East



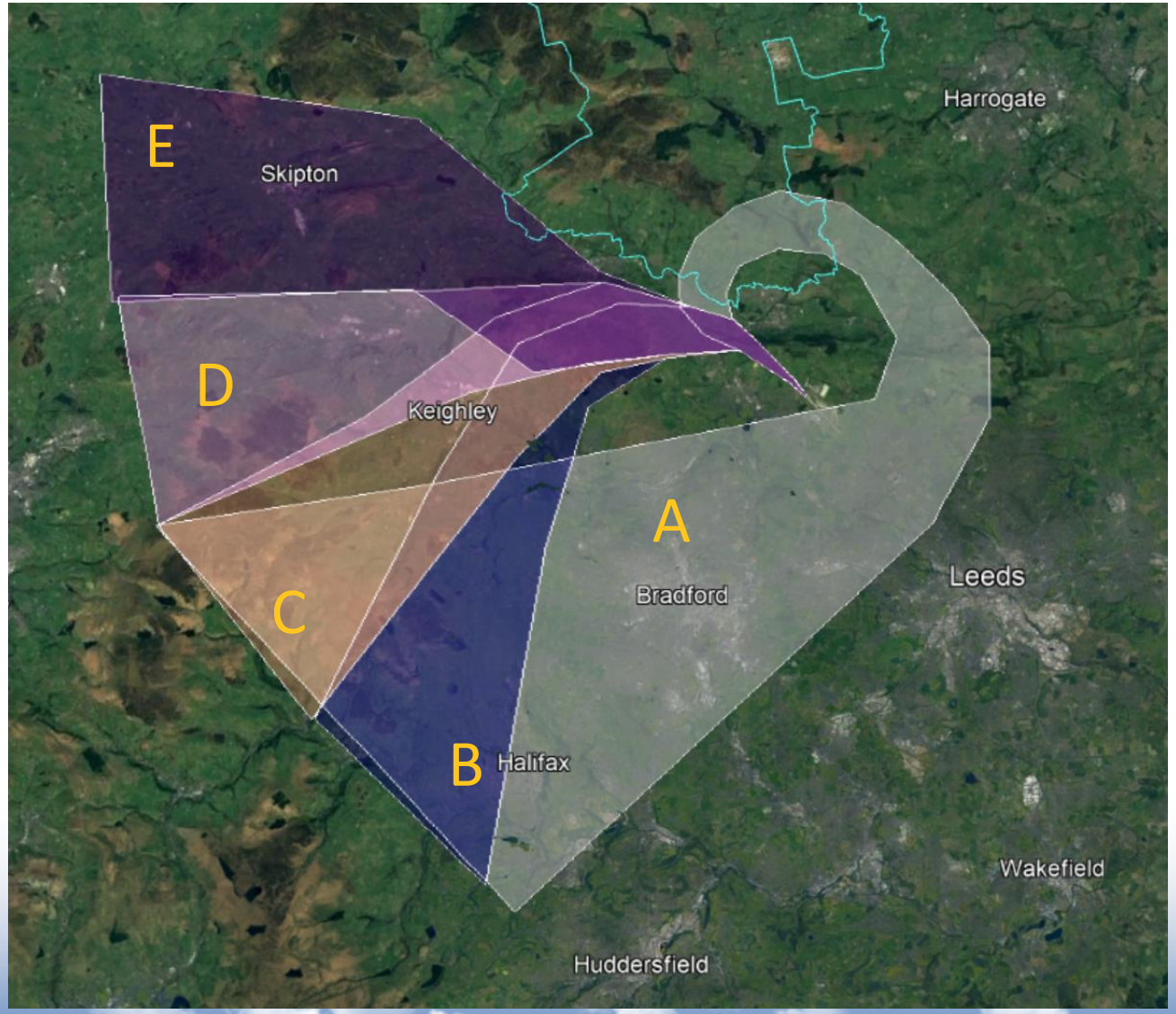
32 South East Deps DP Evaluation

Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
32SE-A	Currently no CAS to contain	Baseline affects less people at lower levels than this option- Burley in Warfedale/ Bramhope	Overflies Lindley Wood Res.		Would require a greater volume of CAS to be established						
32SE-B	Currently no CAS to contain	Baseline affects less people at lower levels than this option- Burley in Warfedale/ Bramhope	Overflies Lindley Wood Res.		Would require a greater volume of CAS to be established						
32SE-C	Currently no CAS to contain	Baseline affects less people at lower levels than this option- Burley in Warfedale/ Bramhope	Overflies Lindley Wood Res.		Would require a greater volume of CAS to be established						
32SE-D											
32SE-E											

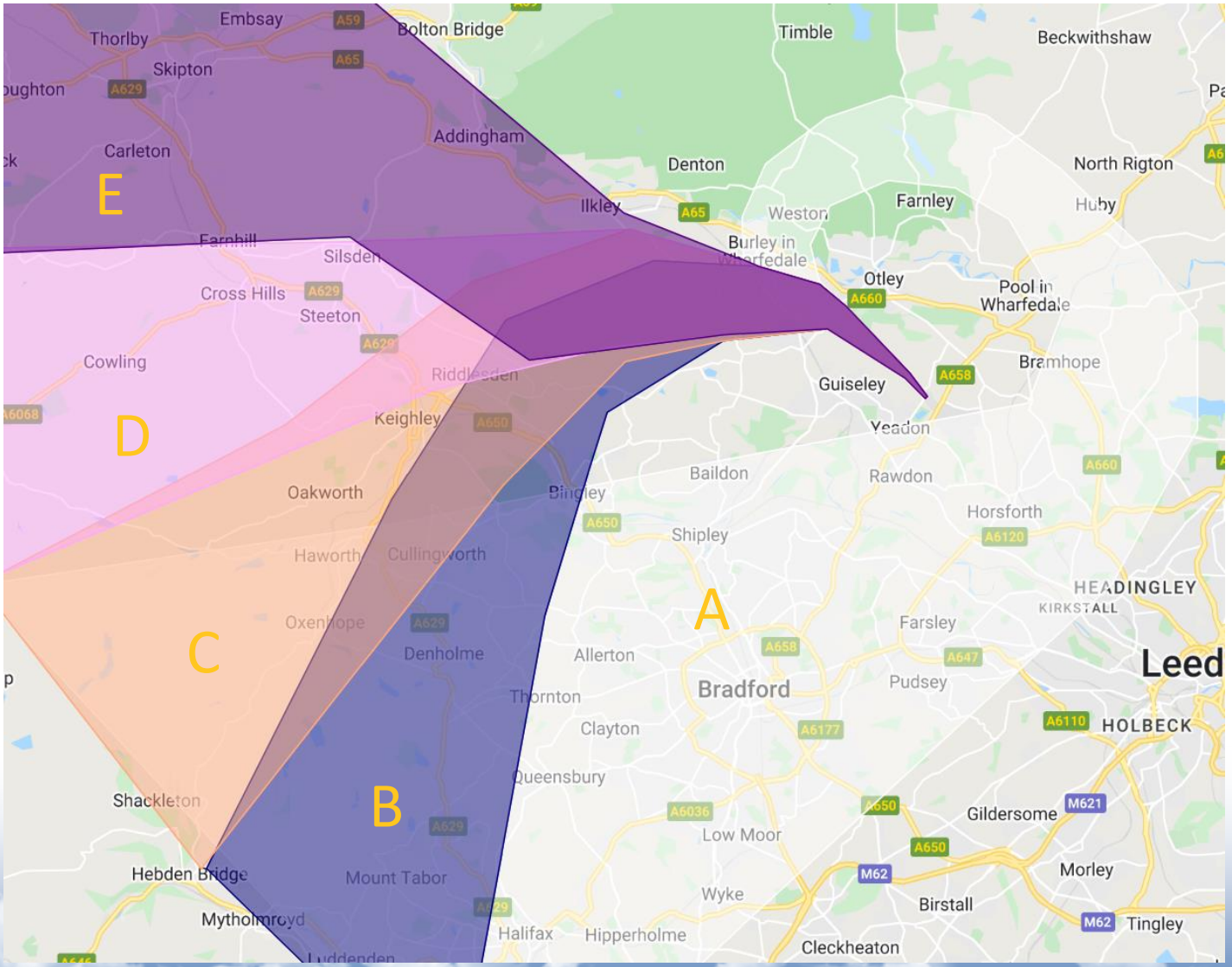
Runway 32 – South and West

Existing departures bound for the South and West off RW32 turn west in adherence to the NPR and end at NELSA; this is replicated in Option C (32S&WC).

Runway 32 – South and West



Runway 32 – South and West



Runway 32 – South and West

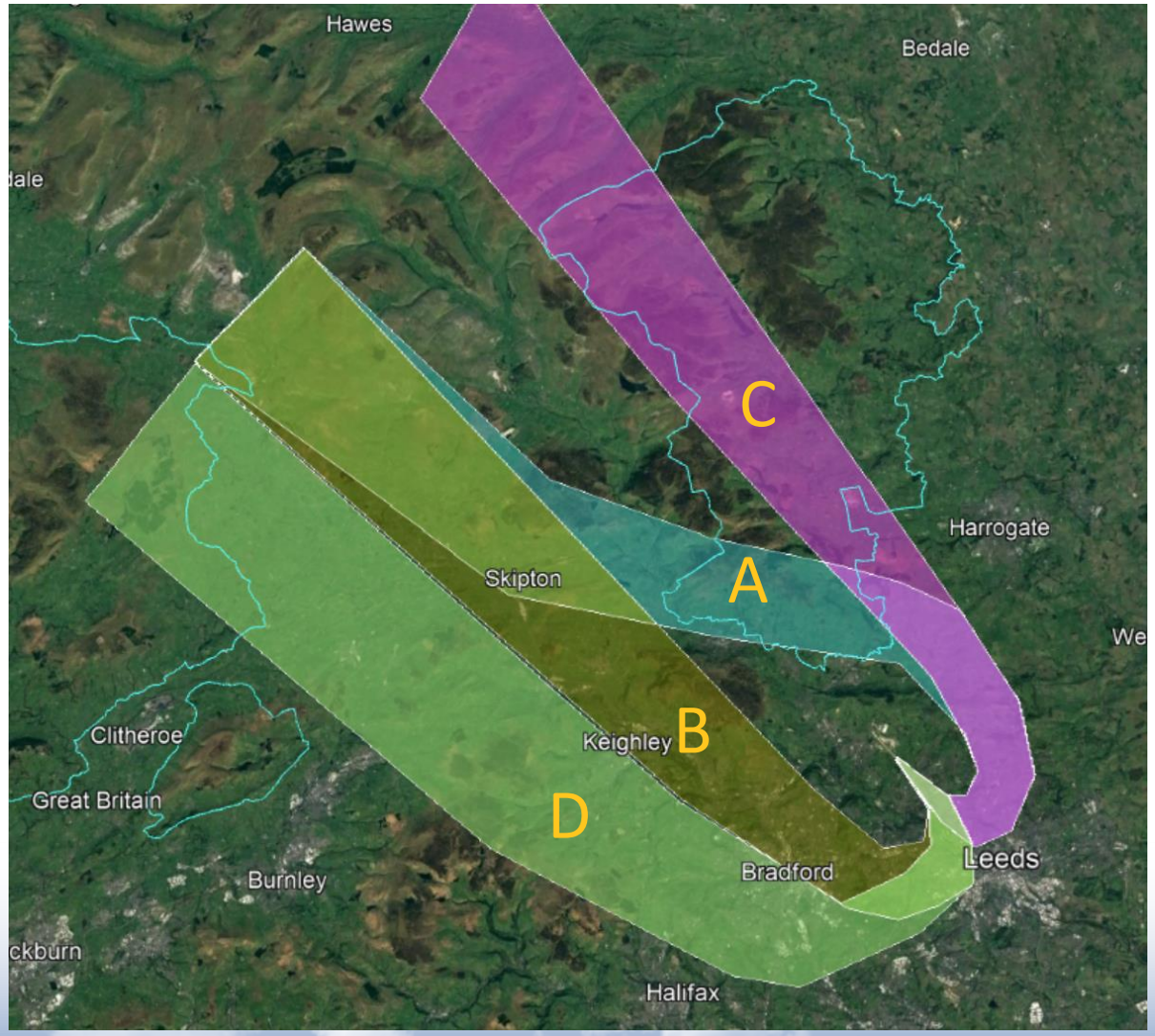
32 South & West Deps DP Evaluation

Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
32S&W-A	The current airspace would not contain this SID	Baseline affects less people at lower levels than this option- Burley in Warfedale/ Bramhope	Overflies Lindley Wood Res.	More track miles	Would require a greater volume of CAS to be established				Extra track miles		
32S&W-B											
32S&W-C											
32S&W-D											
32S&W-E	The current airspace would not contain this SID		Overfly Ilkley Moor	More track miles	Would potentially require a greater volume of CAS to be established- due to higher CAS base				Extra track miles		

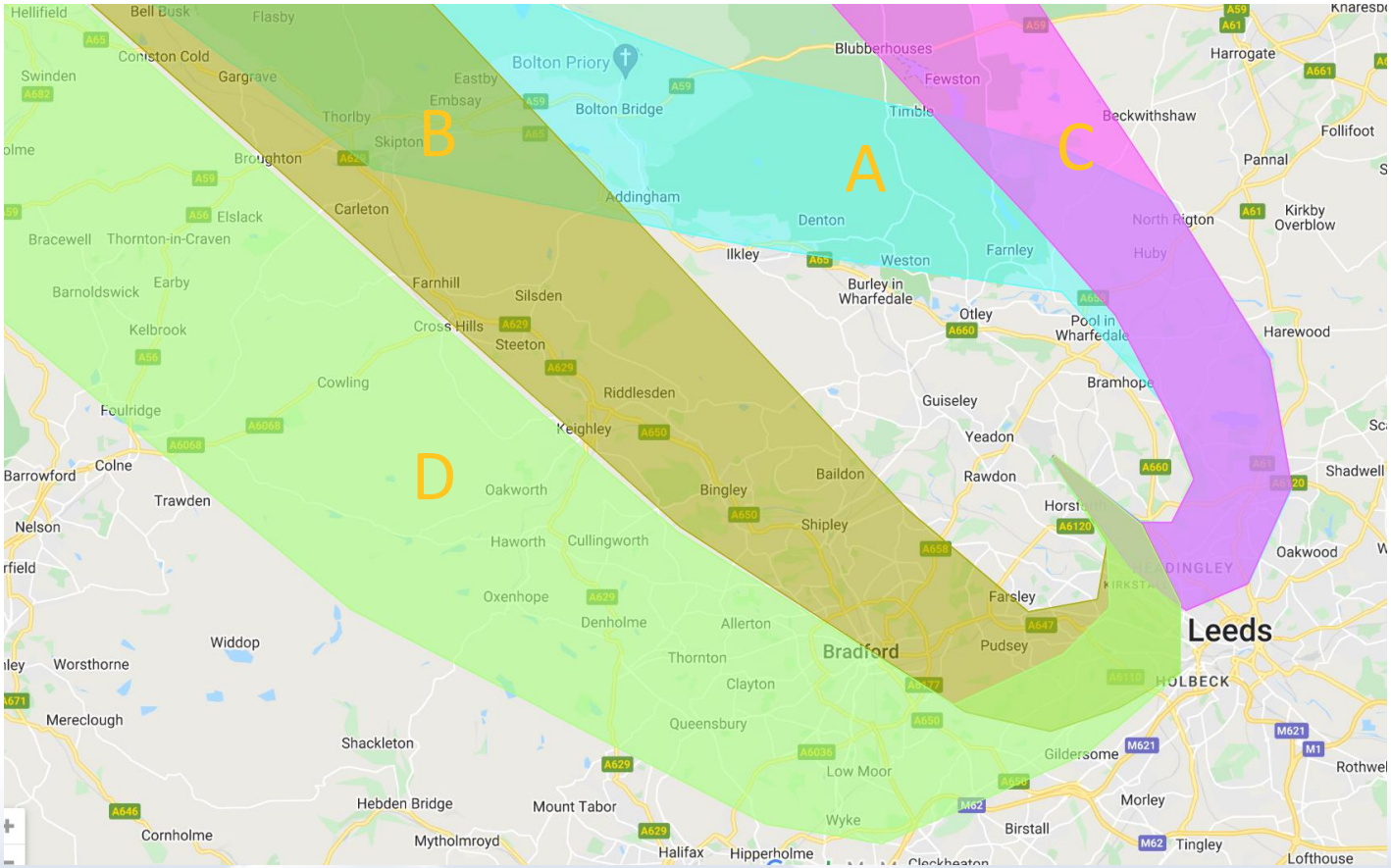
Runway 14 – North West

Existing departures to the North-West off RW14 turn on adherence to the NPR.

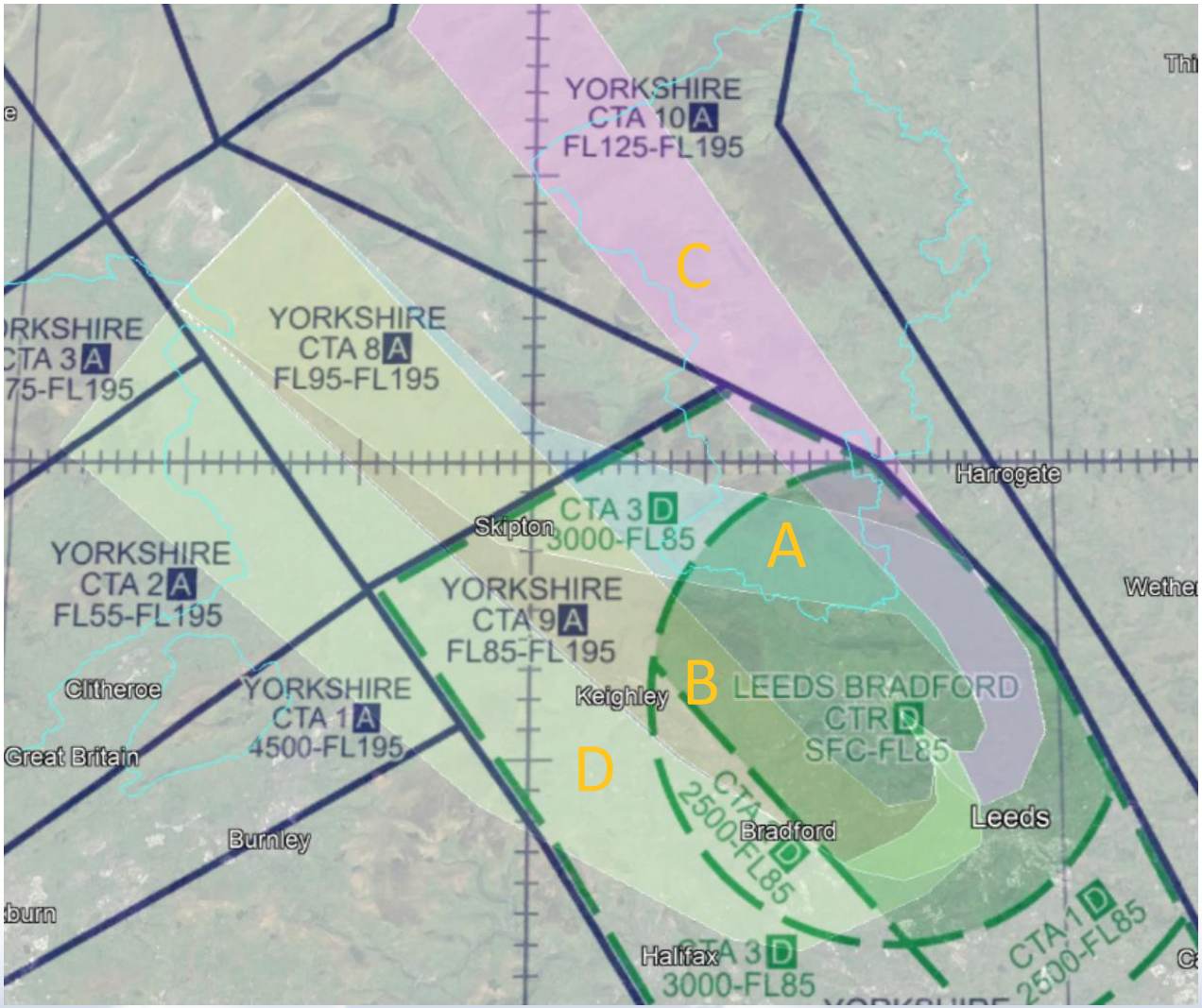
Runway 14 – North West



Runway 14 – North West



Runway 14 – North West



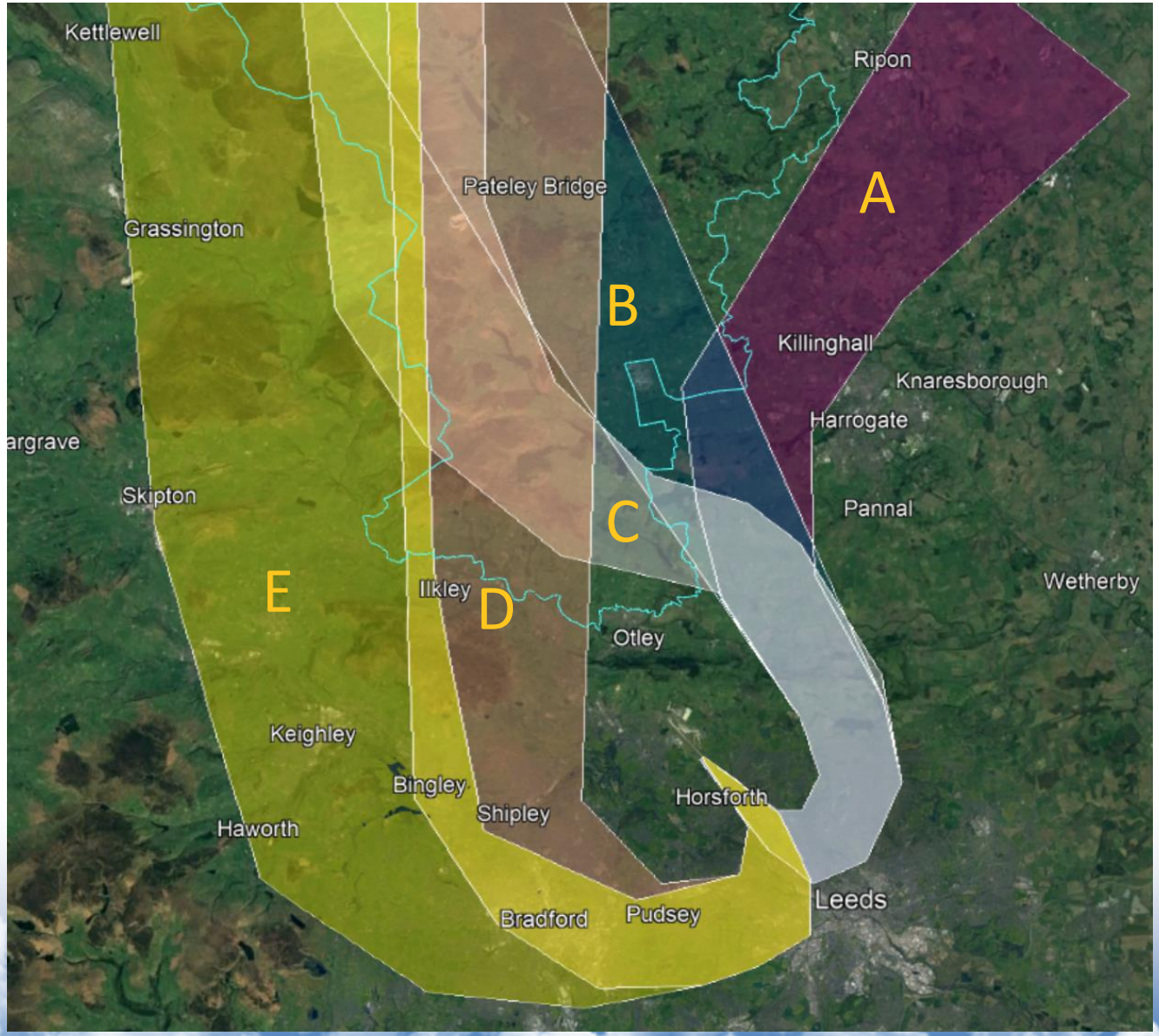
14 North West Deps DP Evaluation

Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
14NW-A	Currently no CAS to contain				Currently no CAS to contain	Potential conflict with inbounds					
14NW-B		Bradford									
14NW-C	Currently no CAS to contain				Currently no CAS to contain						
14NW-D											

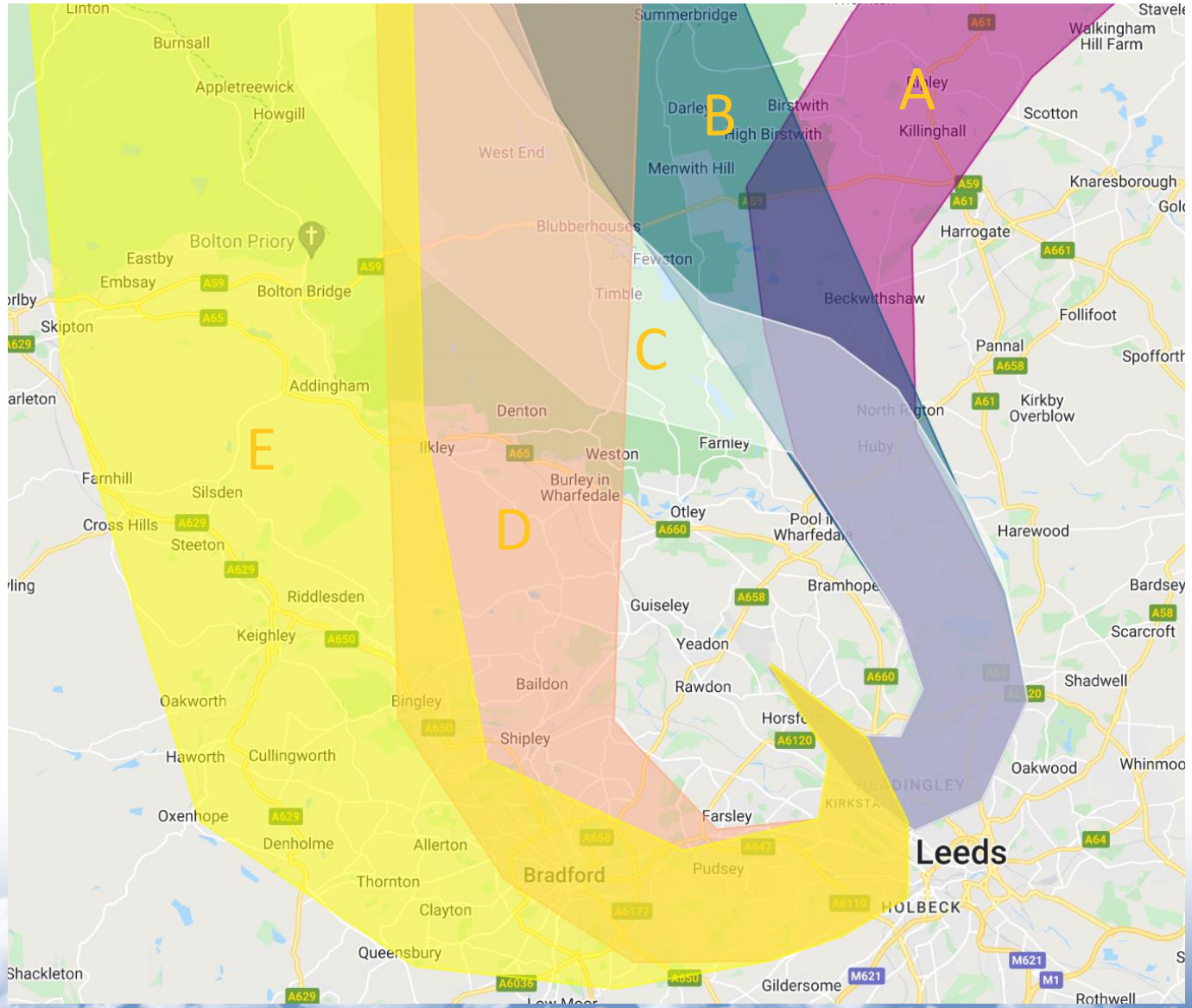
Runway 14 – North East

Existing departures to the North-East off RW14 turn West before turning North towards GASKO upon adherence to the NPRs. Option D (14NED) seeks to replicate this.

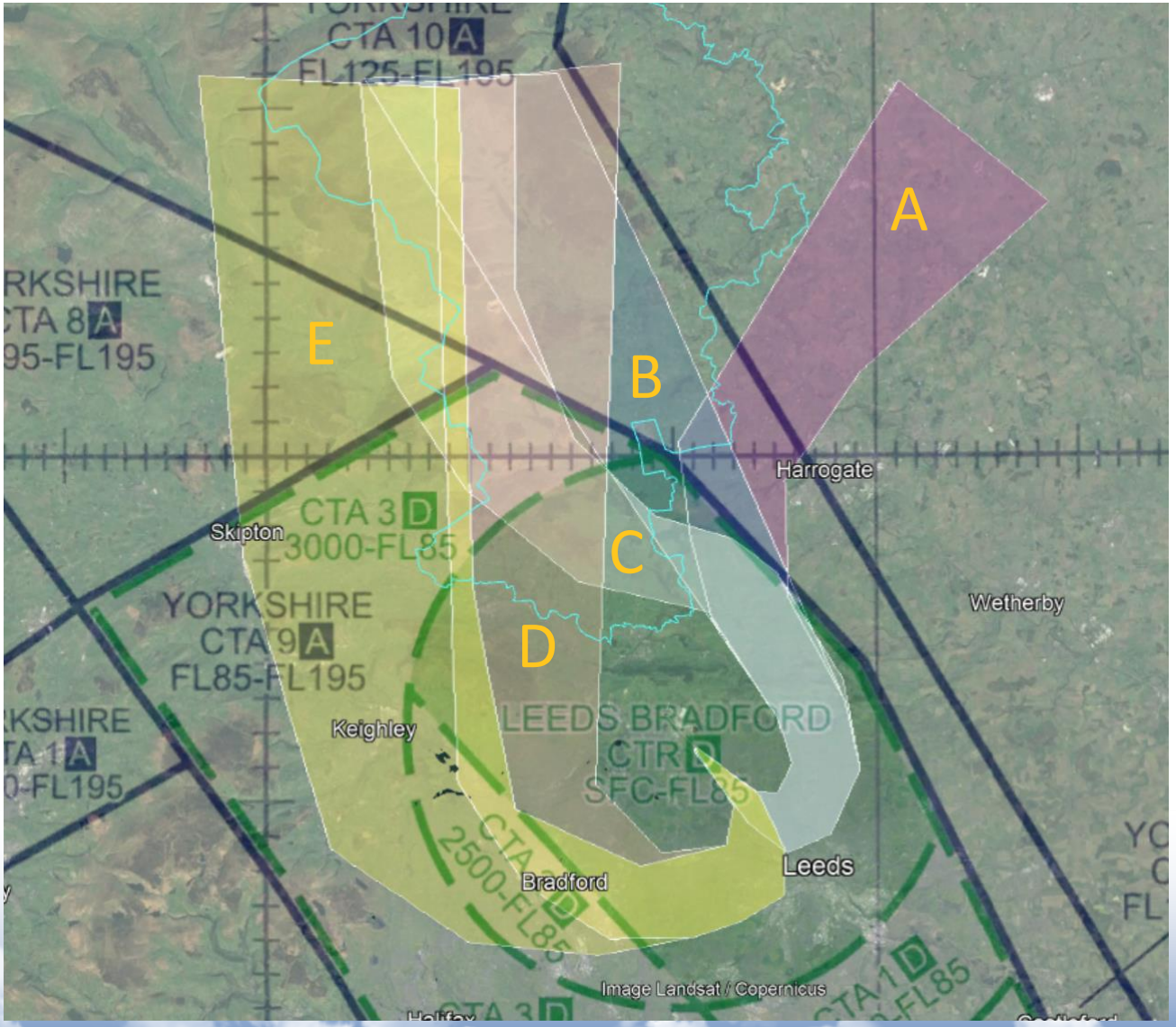
Runway 14 North East



Runway 14 North East



Runway 14 North East



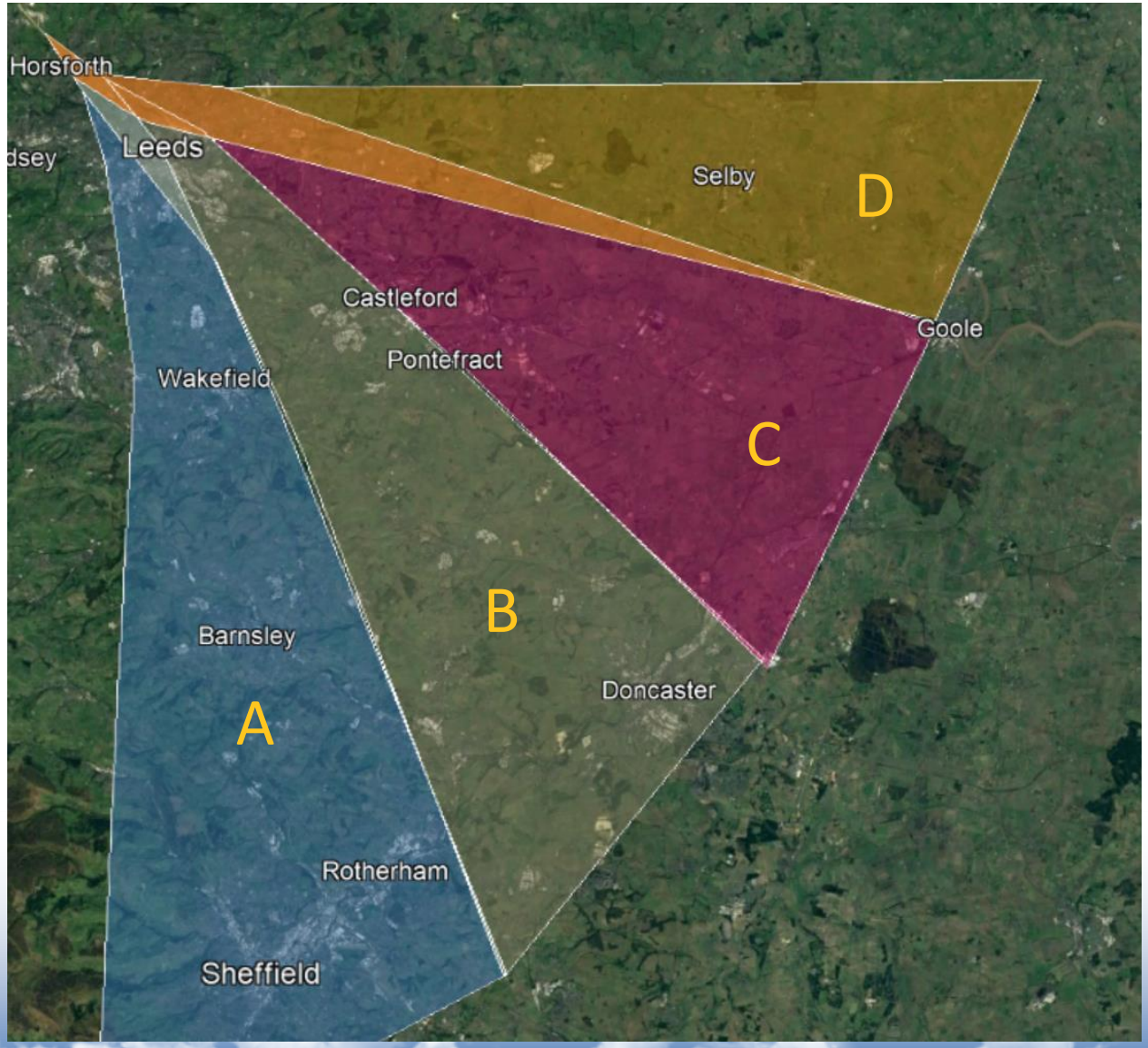
14 North East Deps DP Evaluation

Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
14NE-A	Currently class G Area of IAA with multiple Fast Jet operations	Overflight of populated areas…			Currently class G Area of IAA with multiple Fast Jet operations						
14NE-B	Currently no CAS to contain				Currently no CAS to contain	Potential conflict with inbounds					
14NE-C	Currently no CAS to contain				Currently no CAS to contain	Potential conflict with inbounds					
14NE-D	Currently no CAS to contain				Currently no CAS to contain	Potential conflict with inbounds					
14NE-E											

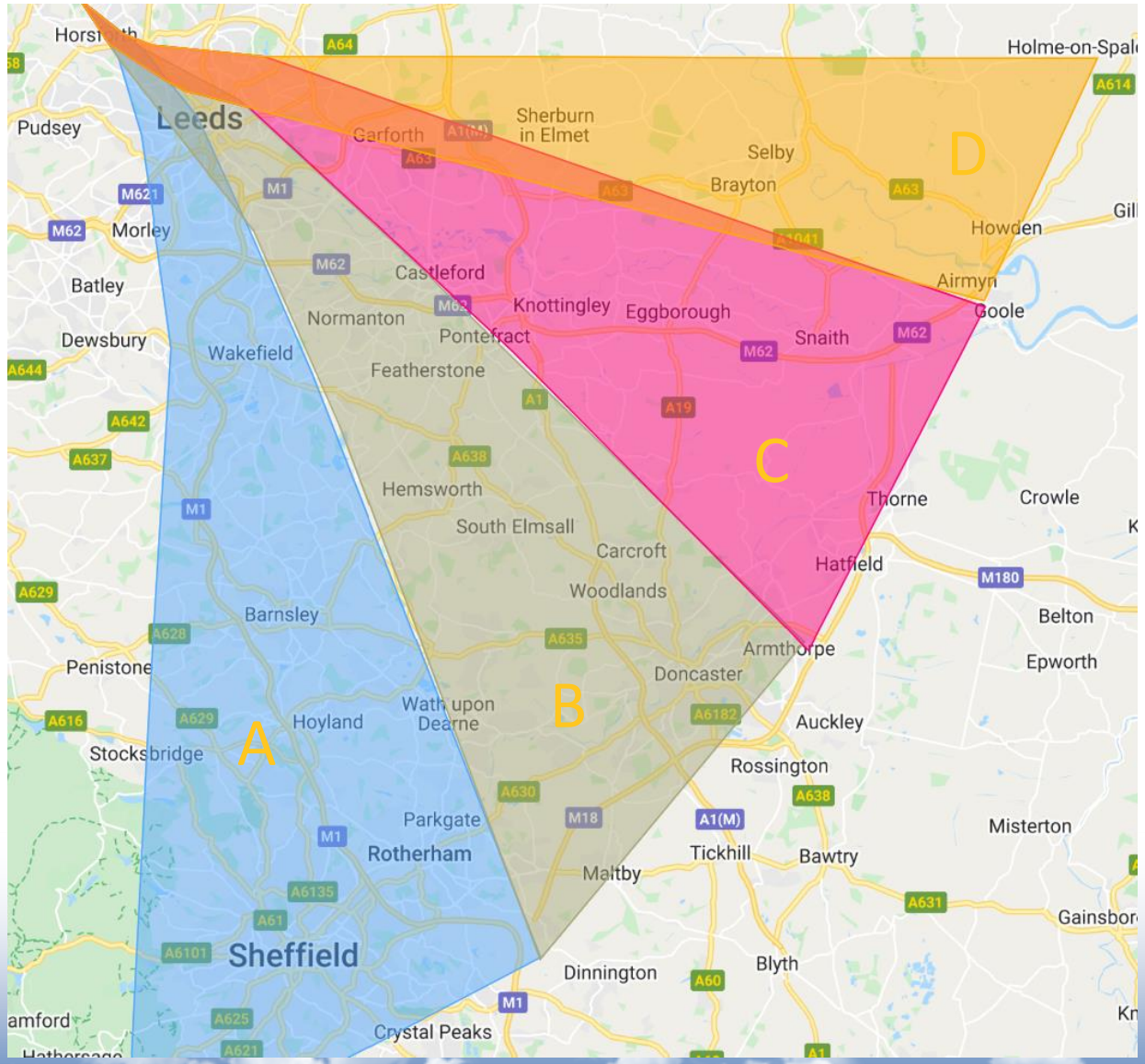
Runway 14 – South East

Existing departures to the South-East off RW14 route almost straight ahead in adherence to the NPRs before turning for DOPEK and LAMIX. Option B (14SEB) seeks to replicate this.

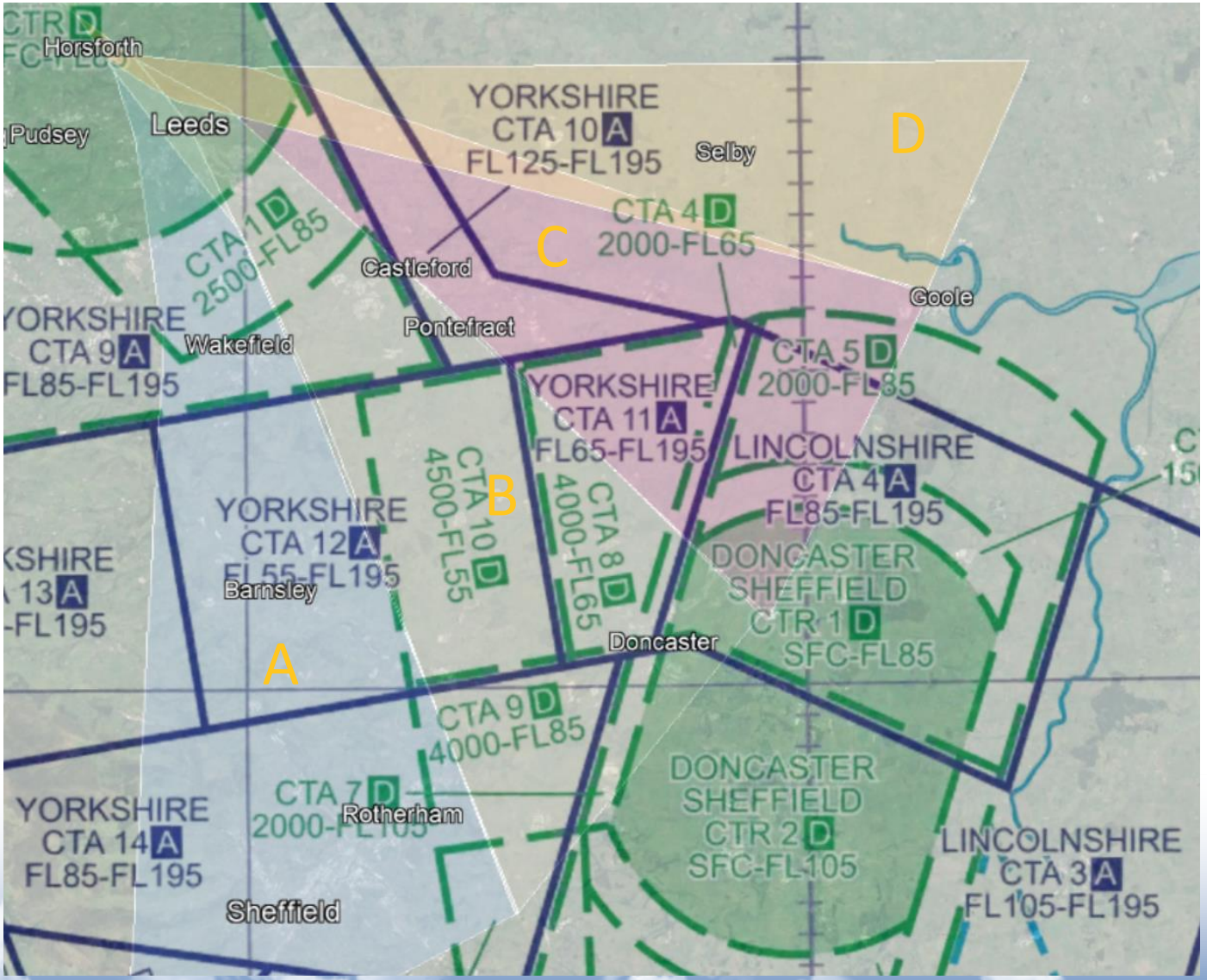
Runway 14 South East



Runway 14 South East



Runway 14 South East



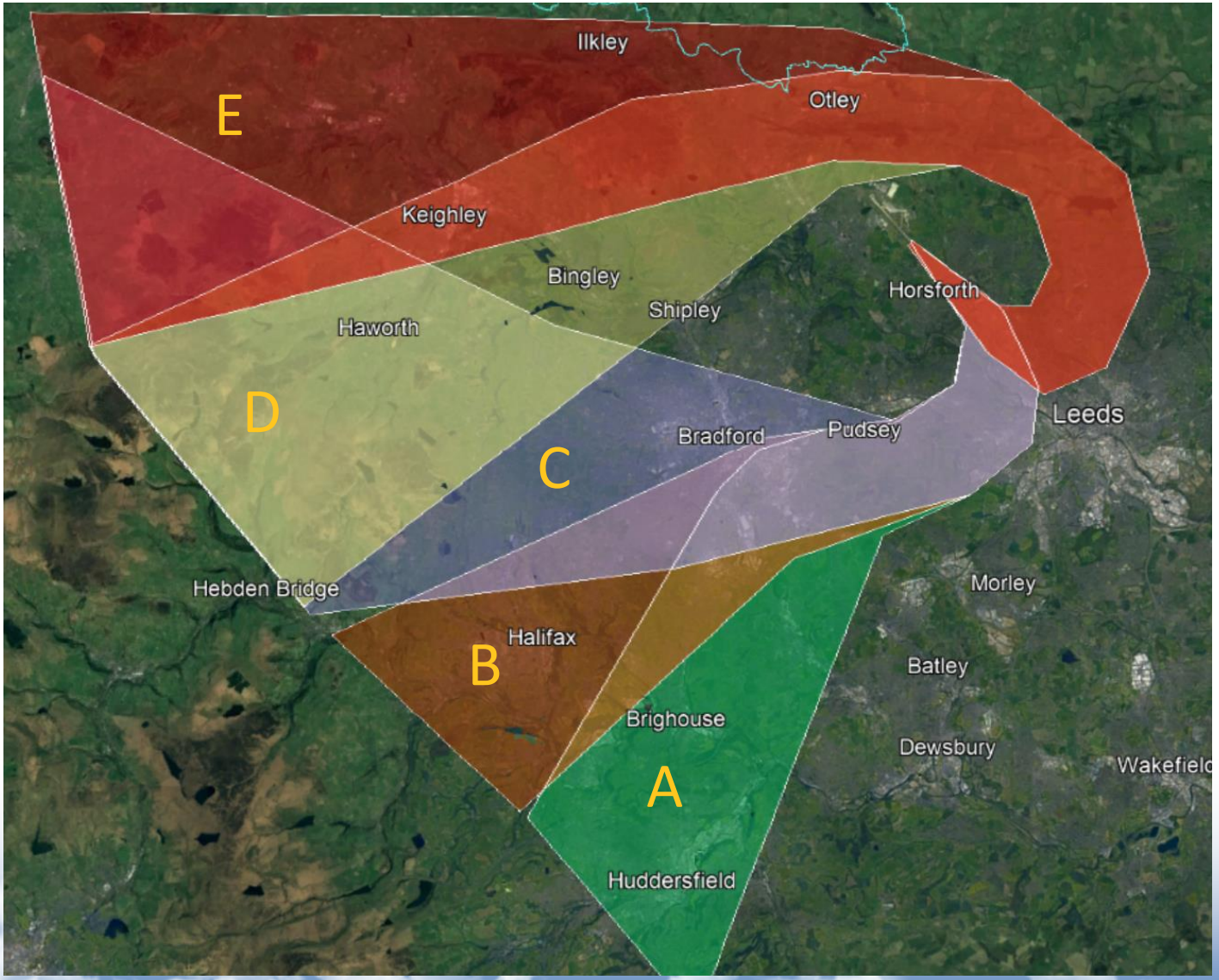
14 South East Deps DP Evaluation

Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
14SE-A									Extra track miles		
14SE-B											
14SE-C	The current airspace would not contain this SID				The current airspace would not contain this SID						
14SE-D	The current airspace would not contain this SID				The current airspace would not contain this SID						

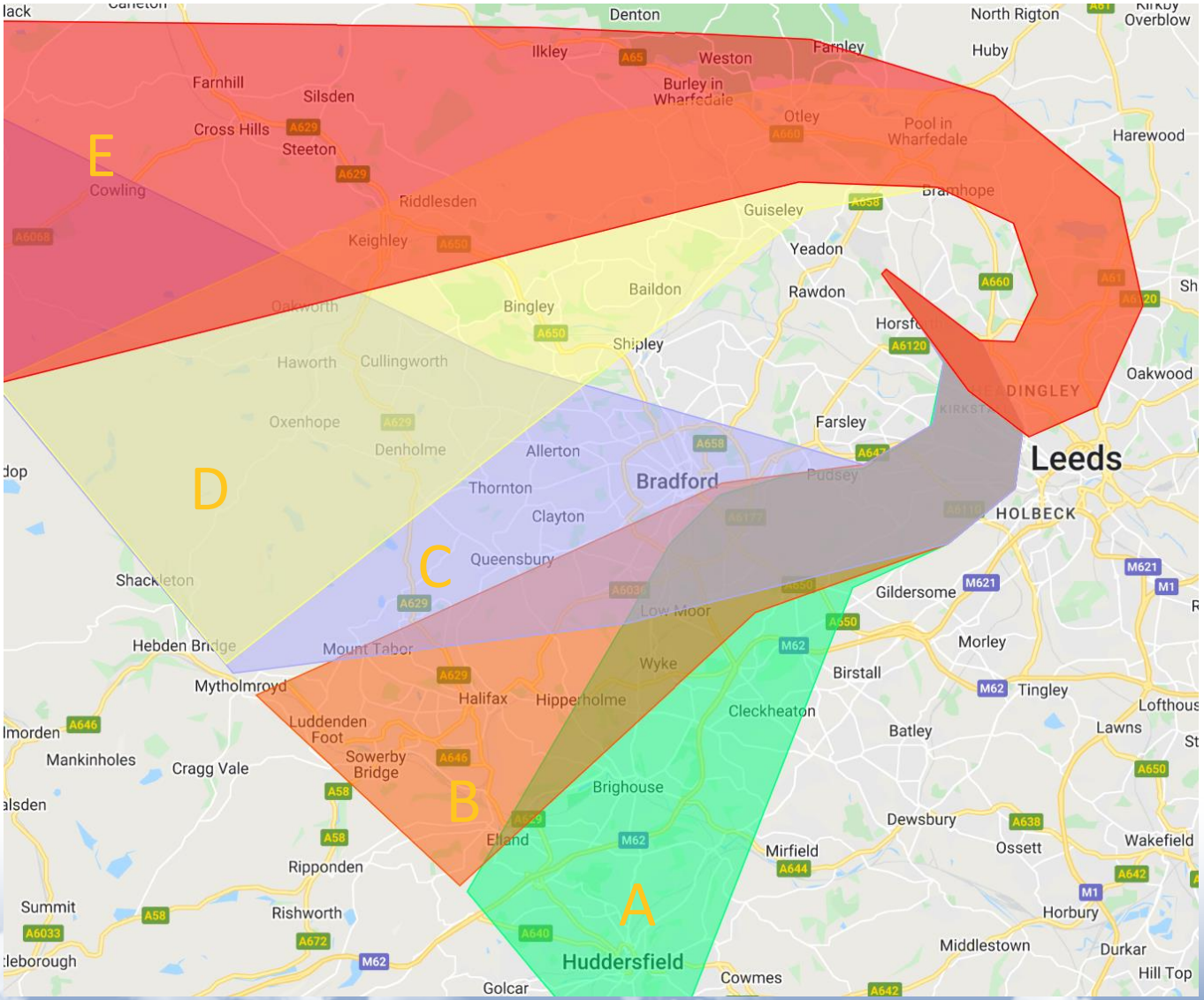
Runway 14 – South and West

Existing departures to the South and West off RW14 turn West towards POL. Option D (14NED) seeks to replicate this.

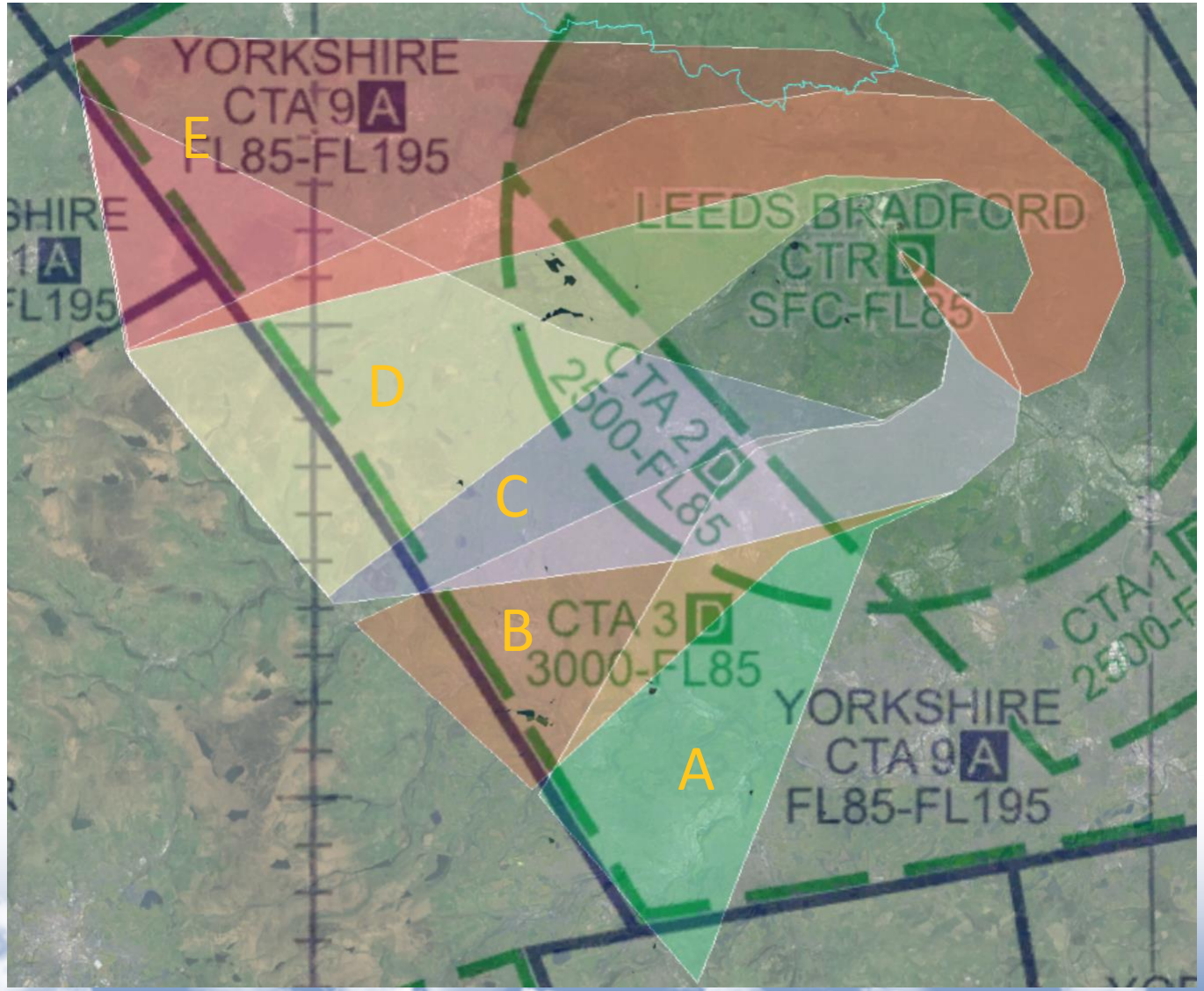
Runway 14 South and West



Runway 14 South and West



Runway 14 South and West

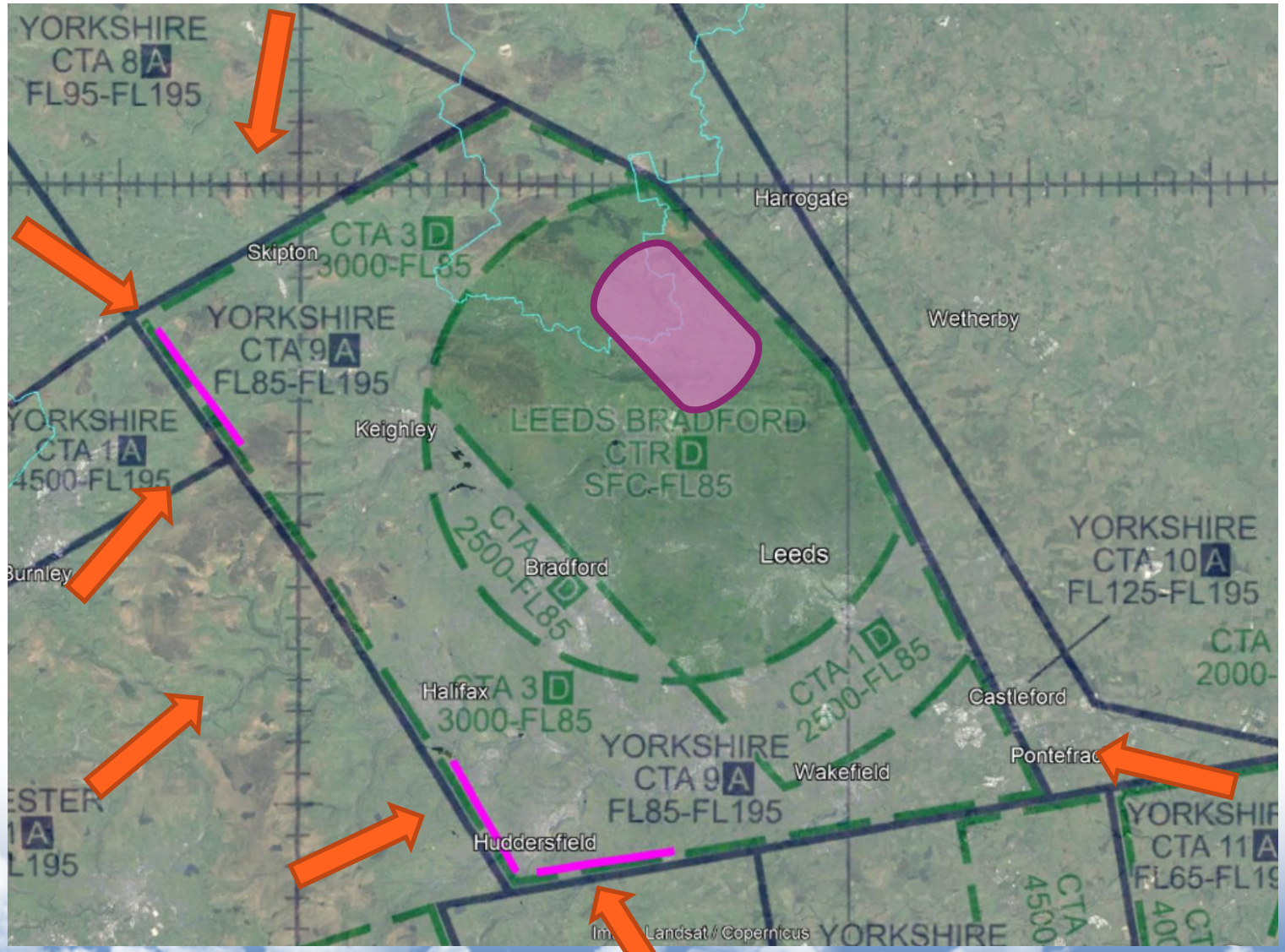


14 South & West Deps DP Evaluation

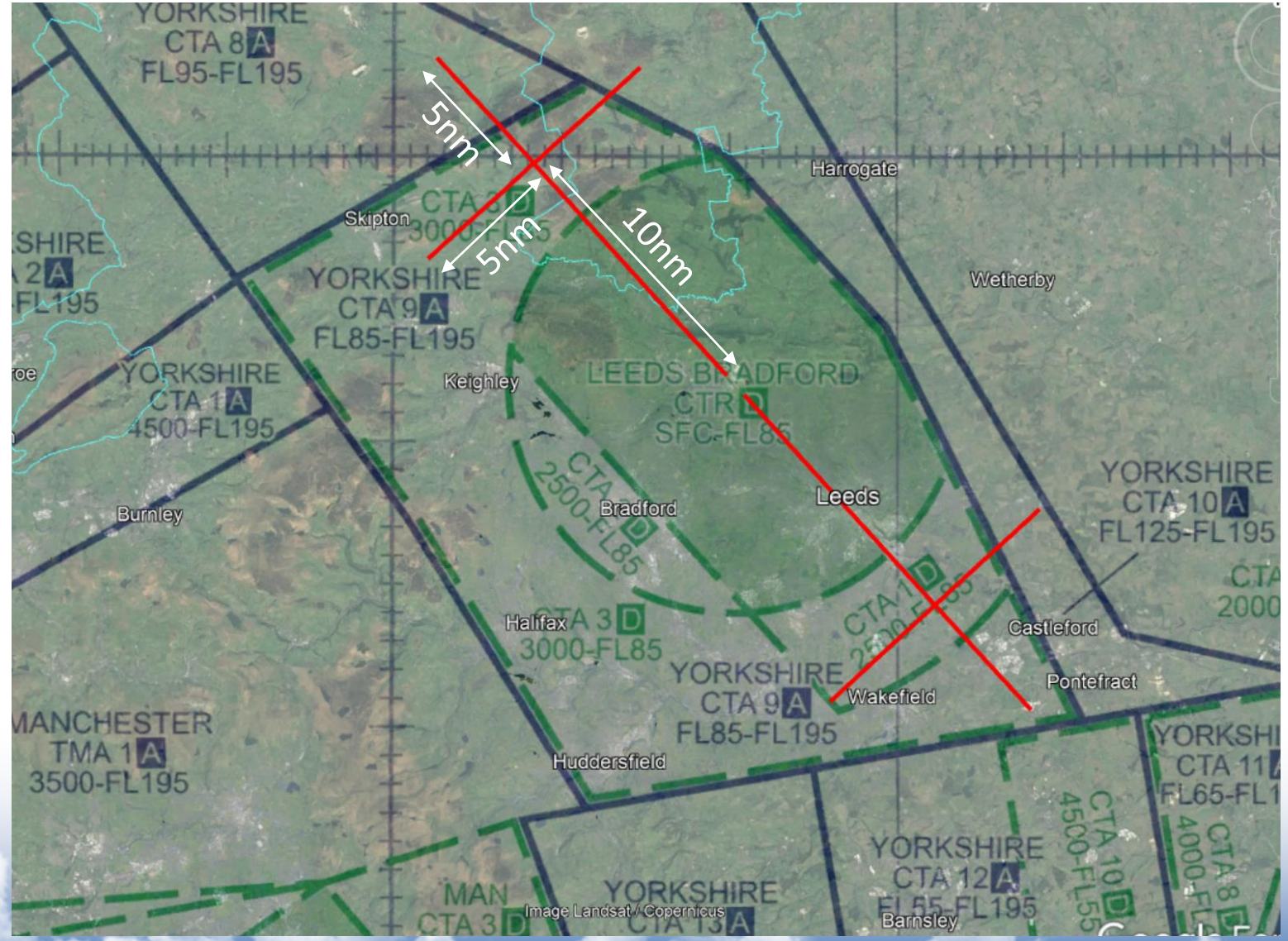
Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
14S&W-A				More track miles if going West							
14S&W-B											
14S&W-C											
14S&W-D		Potential increase in noise for more people		More track miles	Would require a greater volume of CAS to be established	Potential conflict with inbounds			More track miles		
14S&W-E		Potential increase in noise for more people		More track miles	Would require a greater volume of CAS to be established	Potential conflict with inbounds			More track miles		

Arrivals

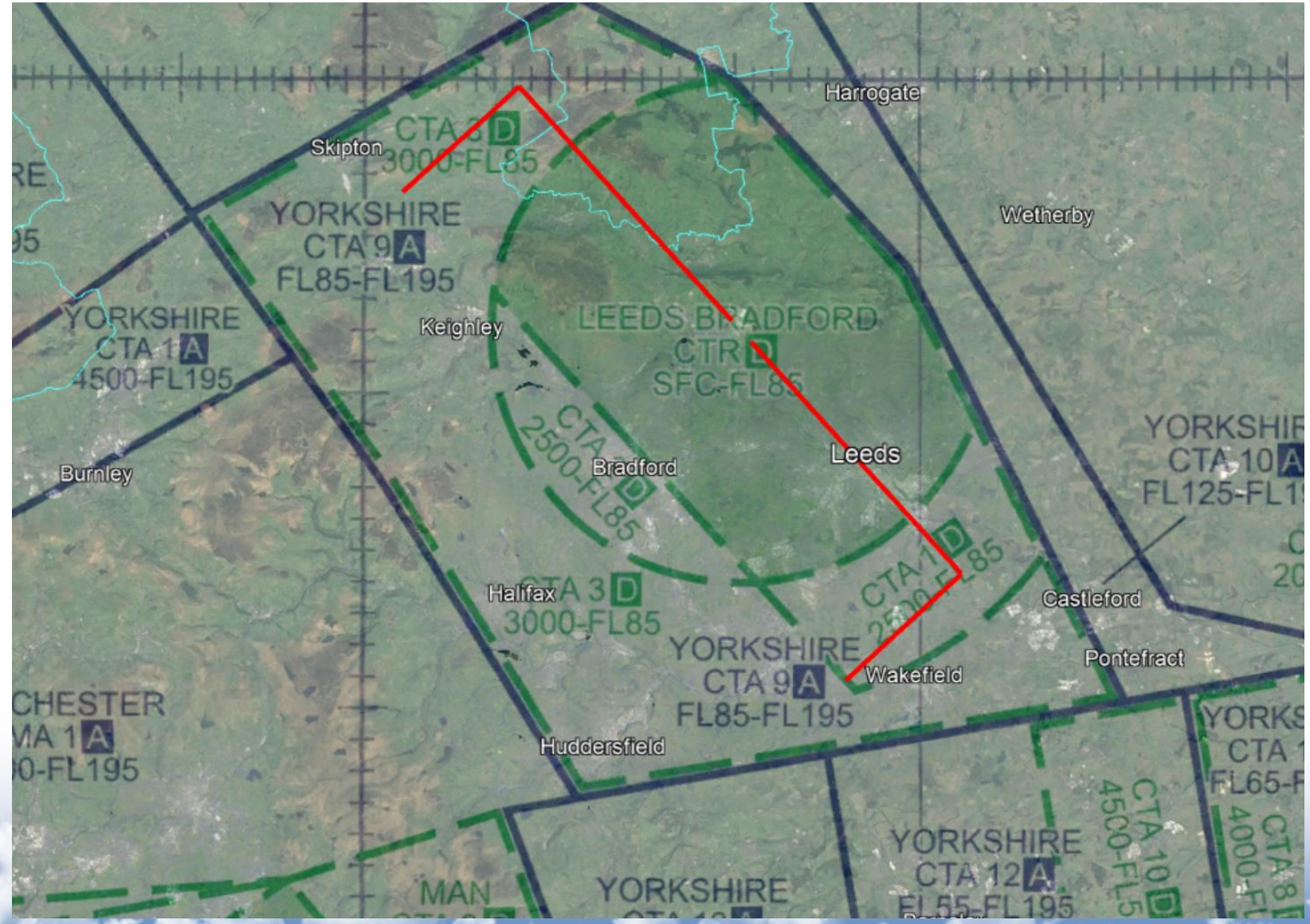
Existing Arrival Routings with Gates



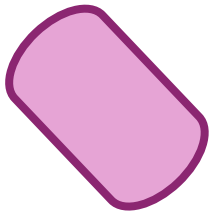
Standard RNAV T-Bars



Amended RNAV T-Bars

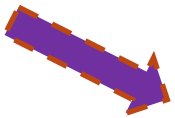


Key

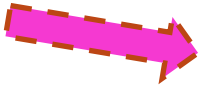


Hold

NERL Inbound track



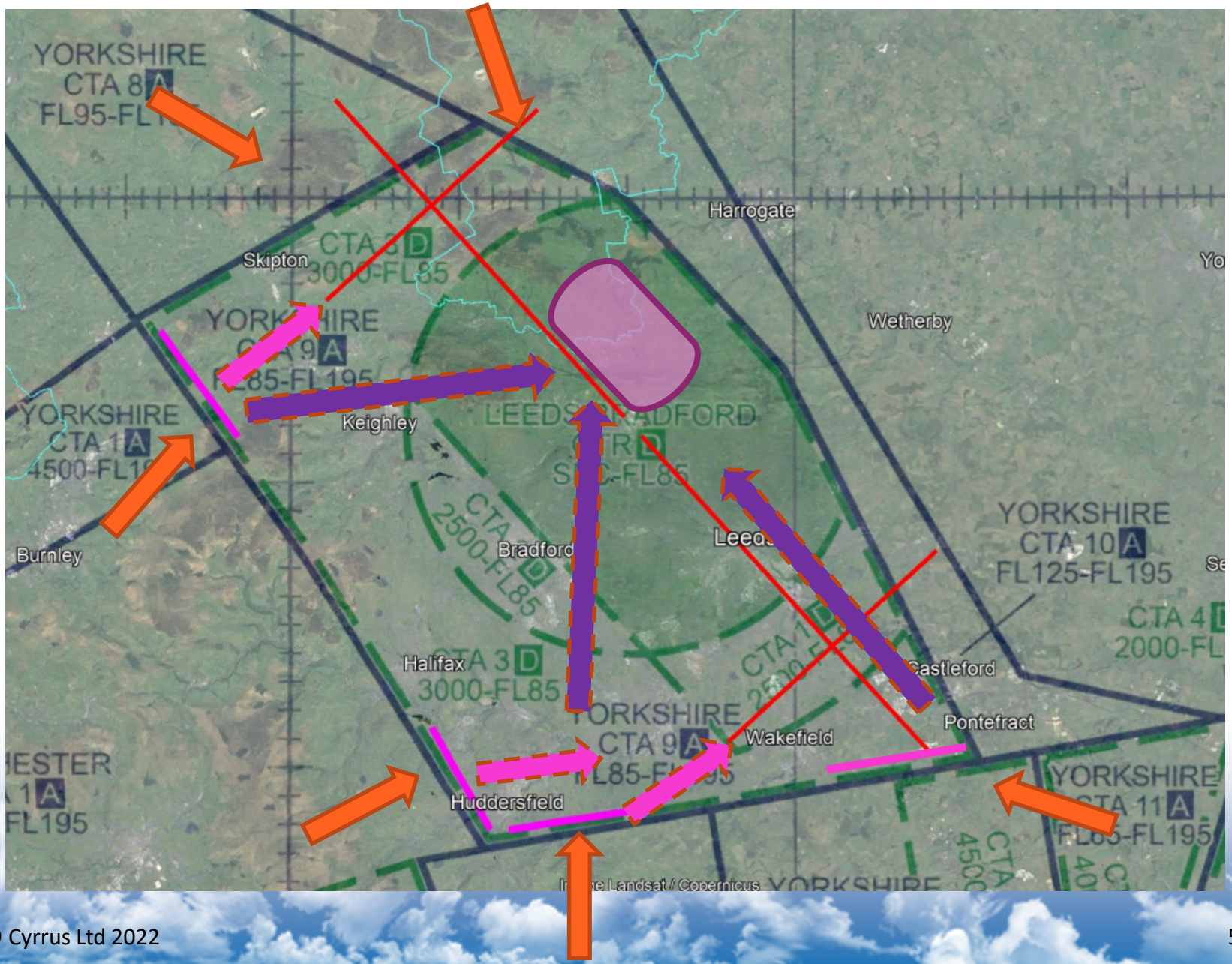
Towards a hold in LBA airspace



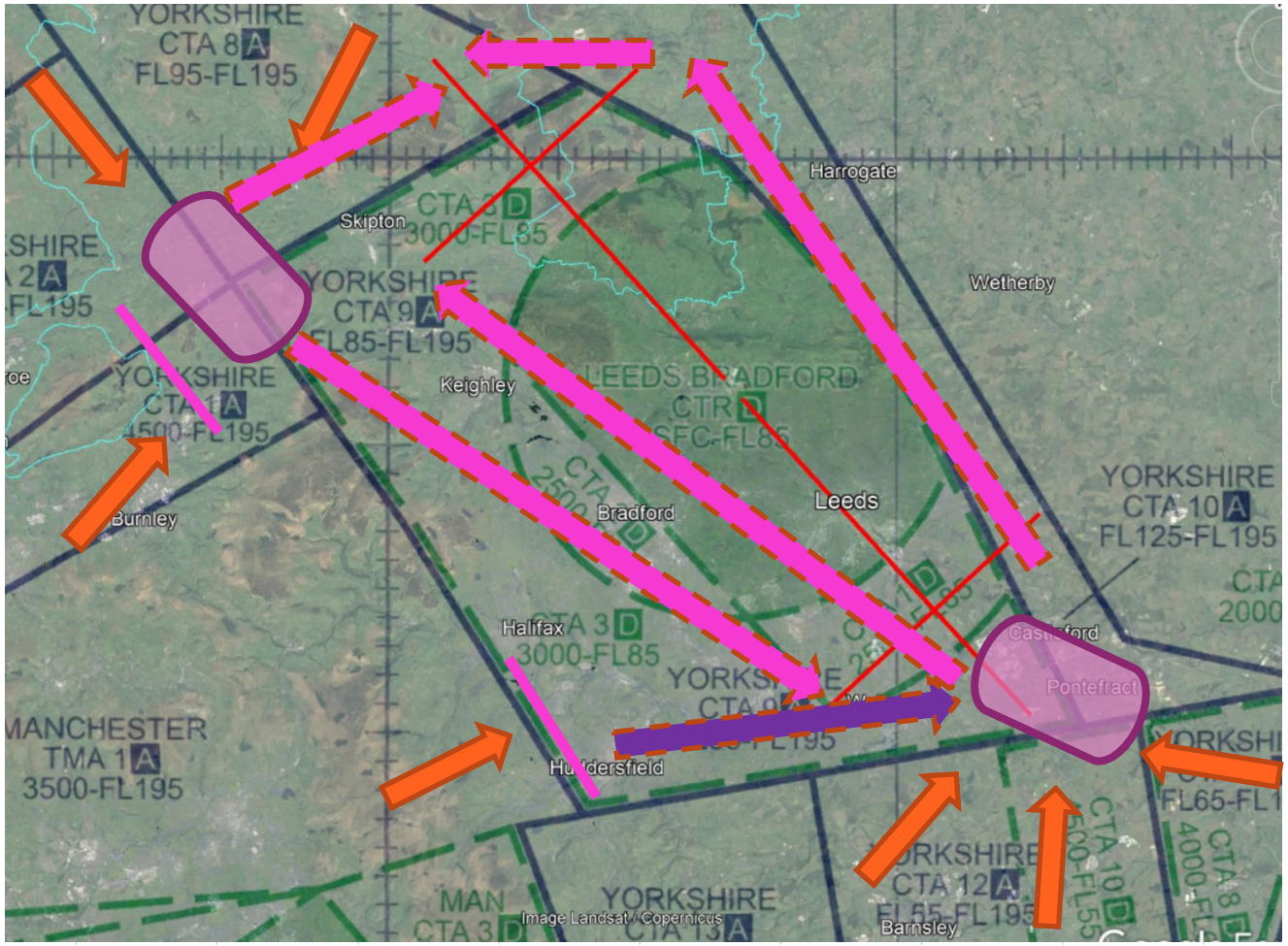
Arrival transition or RMA (vectored)

Gate

Option A – Gate System & Single Hold

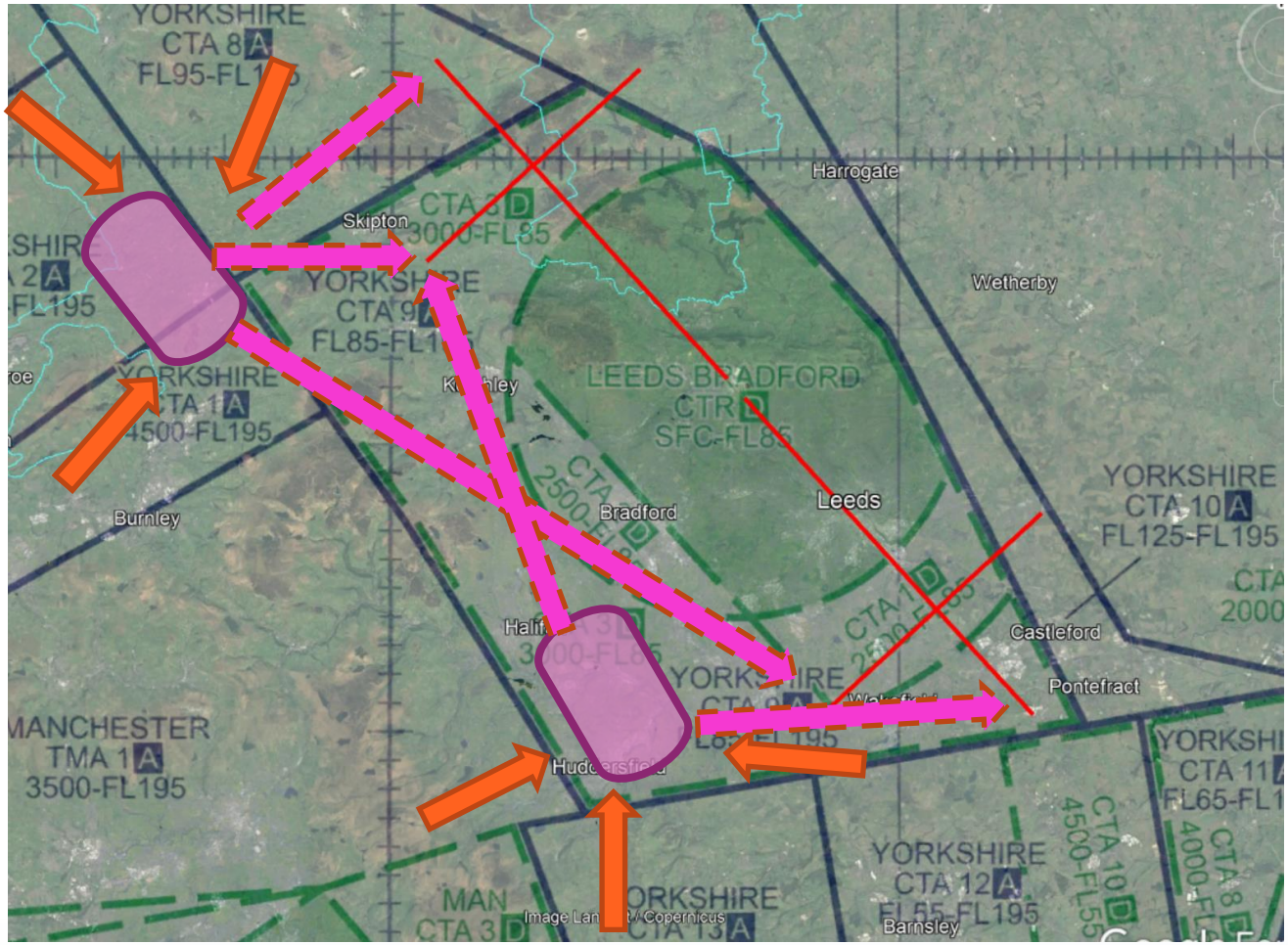


Option B – NW and SE Holds with Gates



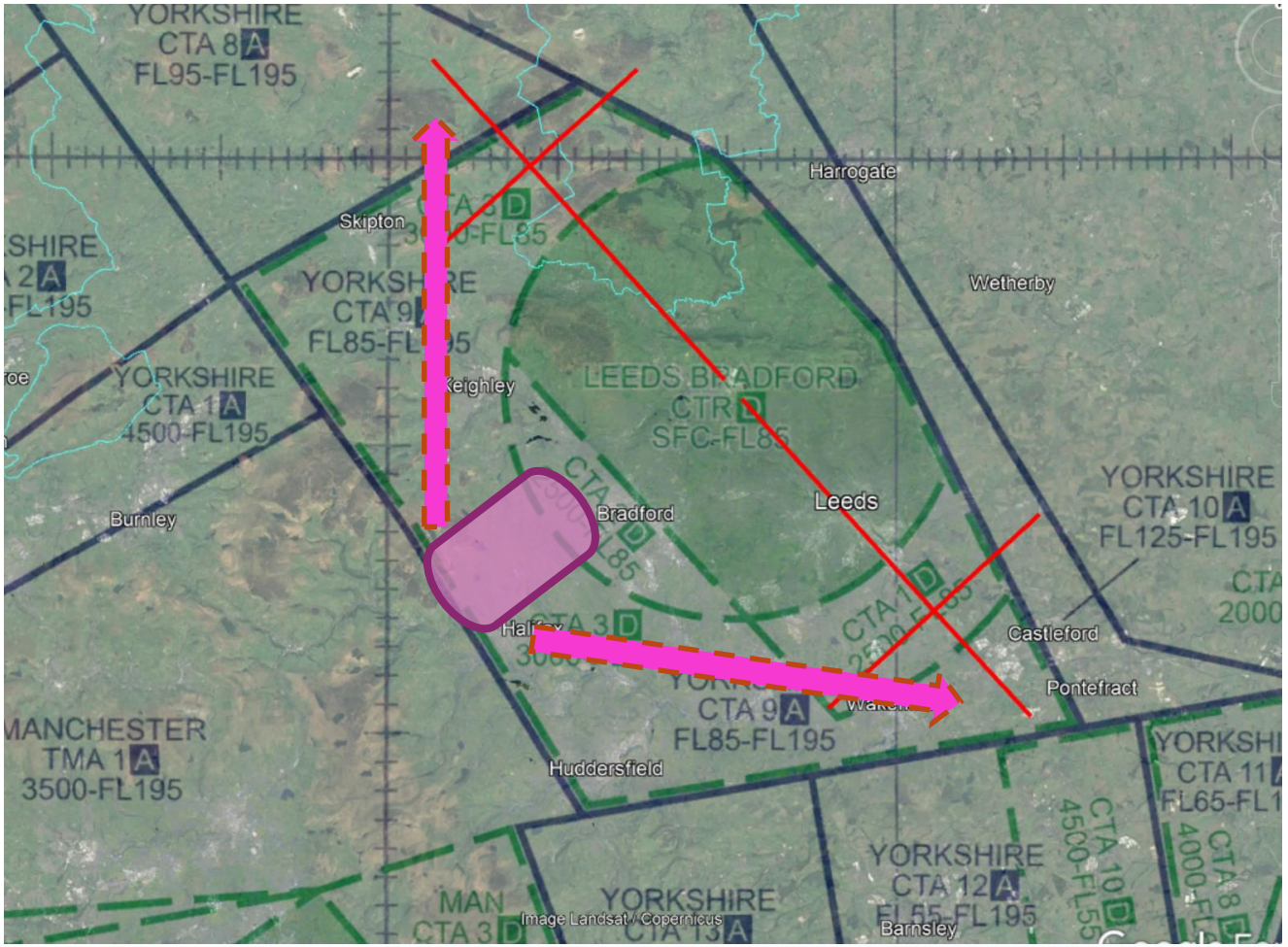
Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
Arrival Option B	Proposed route could take traffic outside of current controlled airspace	Potential for different communities to be overflown		Potential for extra track miles if holding at the alternate end to landing	Could require additional airspace to the East and North				Potential for extra track miles if holding at the alternate end to landing		

Option C – NW and SW Holds



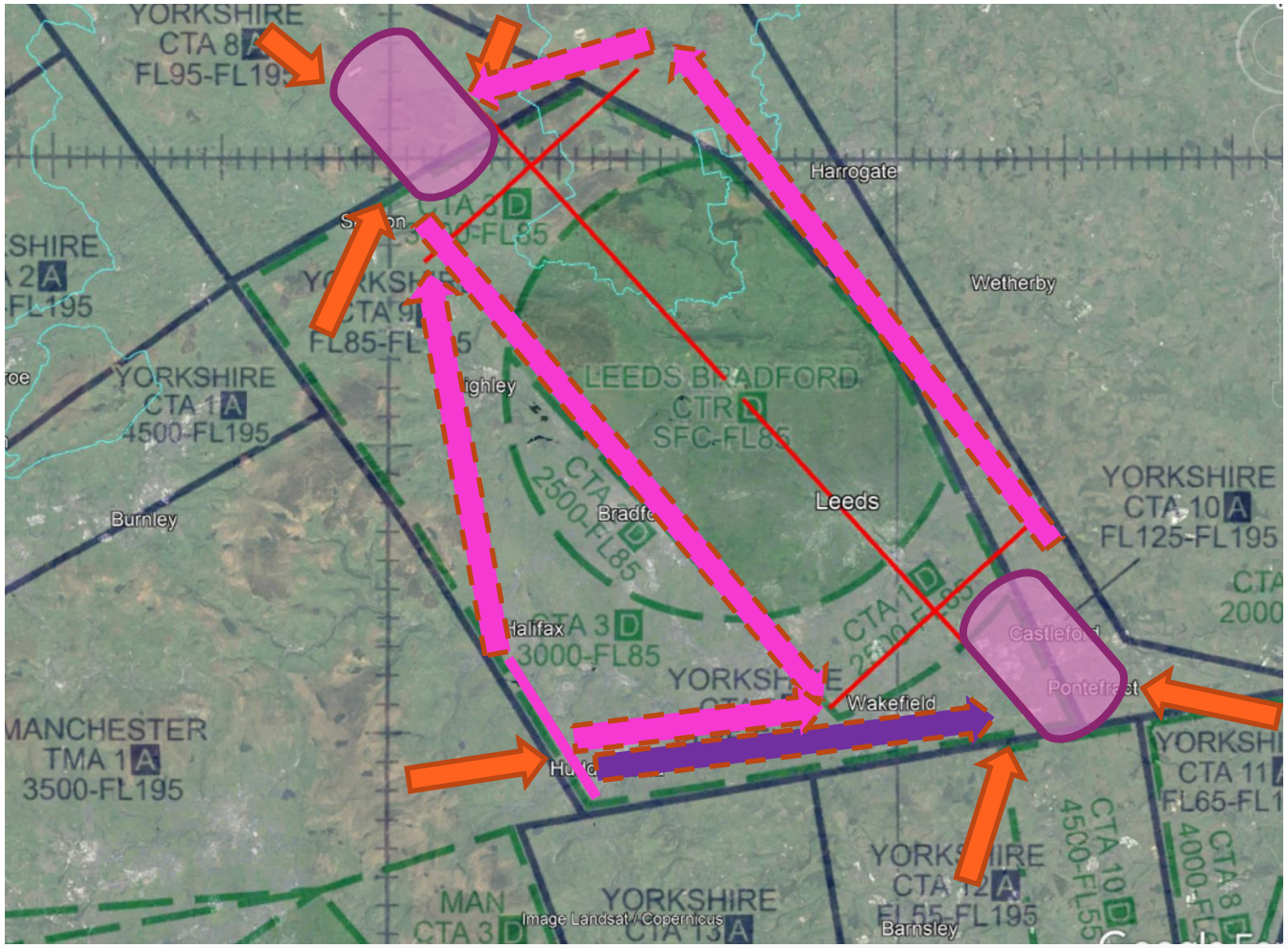
Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
Arrival Option C		Potential for different communities to be overflown						Potential for conflictions with departures			

Option D – Single Hold West



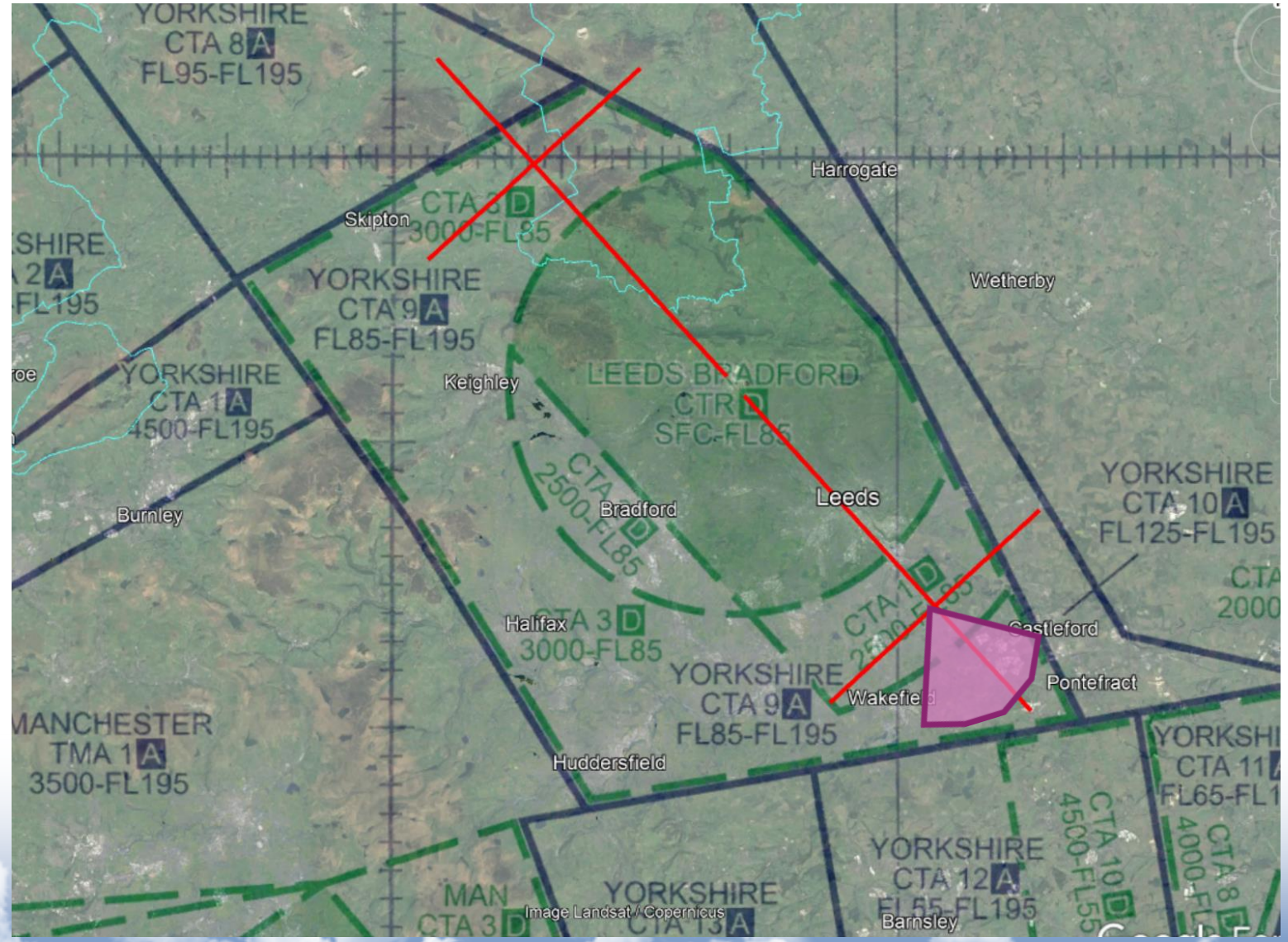
Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
Arrival Option D		Potential for different communities to be overflown						Potential for conflictions with departures			

Option E – Holds on extended CLs

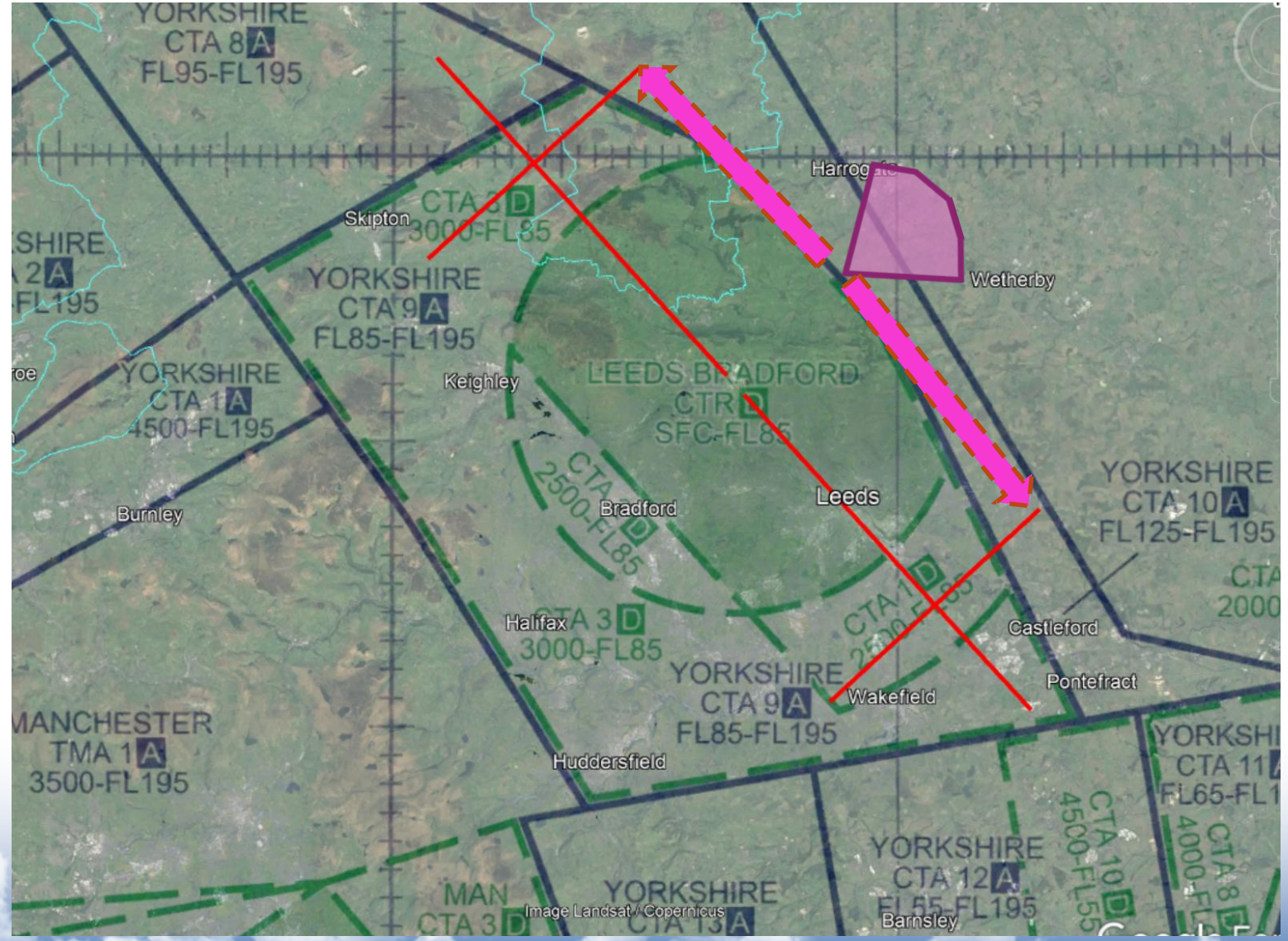


Option	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	DP11
Arrival Option E	Proposed route could take traffic outside of current controlled airspace	Potential for different communities to be overflown		Potential for extra track miles if holding at the alternate end to landing	Could require additional airspace to the East and North				Potential for extra track miles if holding at the alternate end to landing		

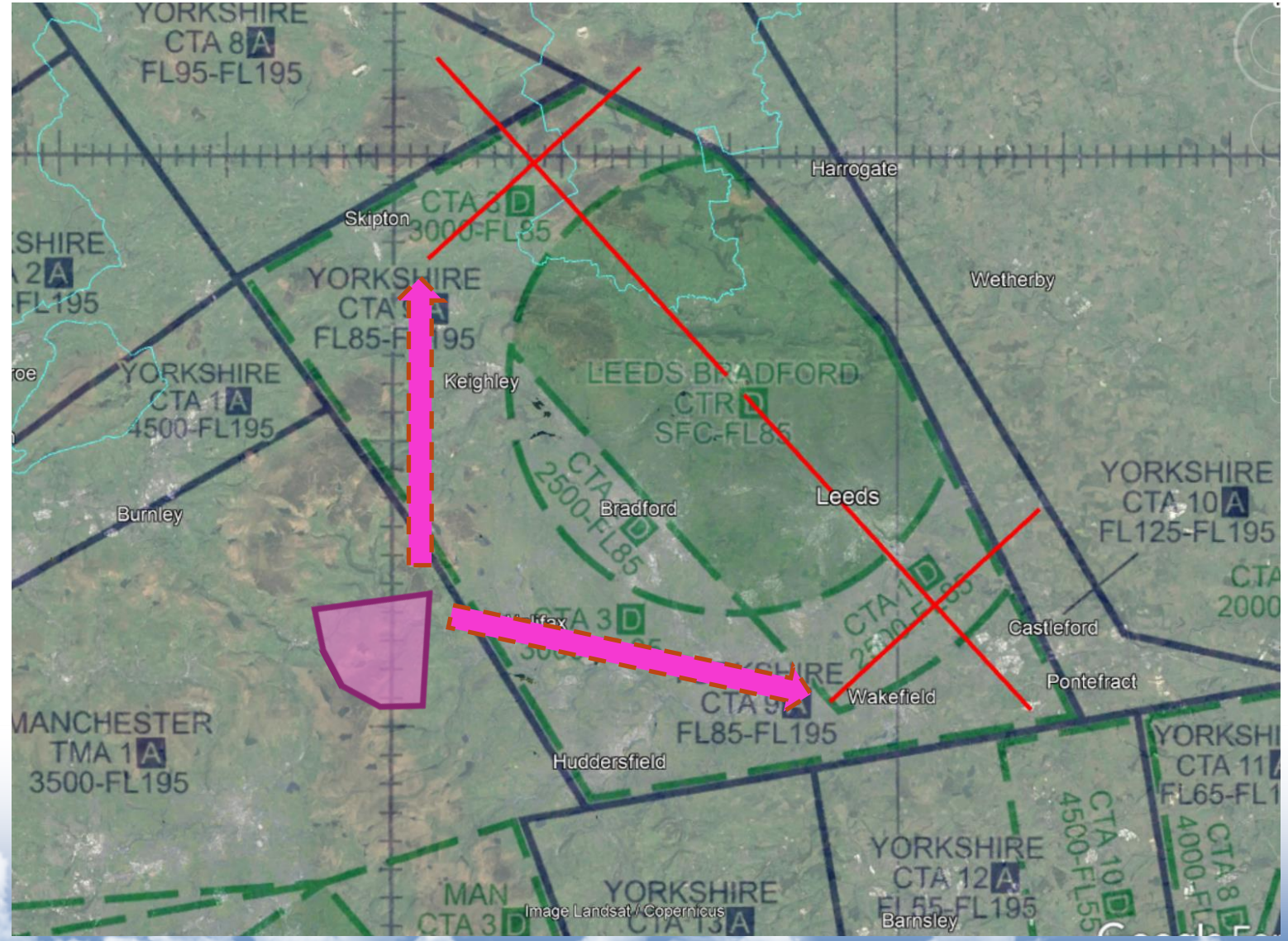
Option F1 – Point Merge South



Option F2 – Point Merge East



Option F3 – Point Merge West



Next Steps

A link to an online survey, and a copy of the presentation will be sent shortly.

In the survey you will be asked if you agree with the Design Principle assessment for each option. If the answer is NO, then there will be a free text field for you to include the DP in question and your assessment.

This feedback will then be integrated with our own DP assessment, shown here today, and a full Design Principle evaluation completed.

This final evaluation will include acceptance and rejection criteria and will form part of our Stage 2a submission.

The final evaluation will be sent out to all stakeholders, prior to submission, for their review.

Thank you for your time are there any Questions?