



Aberdeen Airport FASI-North Airspace Change Proposal

Stage 2B Initial Options Appraisal

Technical Appendix

November 2022

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**Aberdeen International
Airport**



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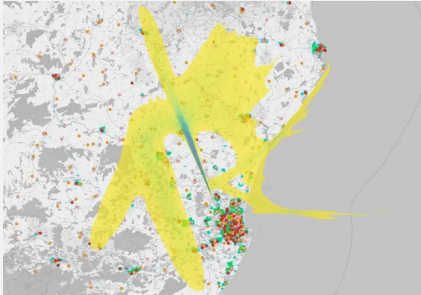
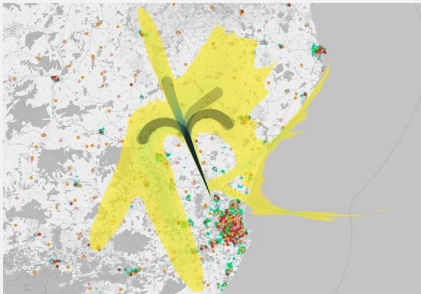
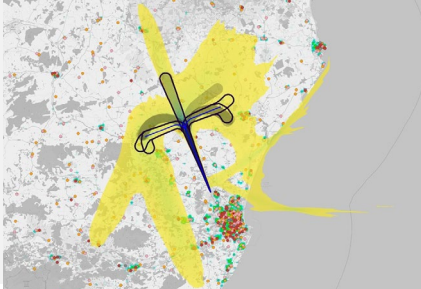
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[Overflight Counts Runway 34](#)

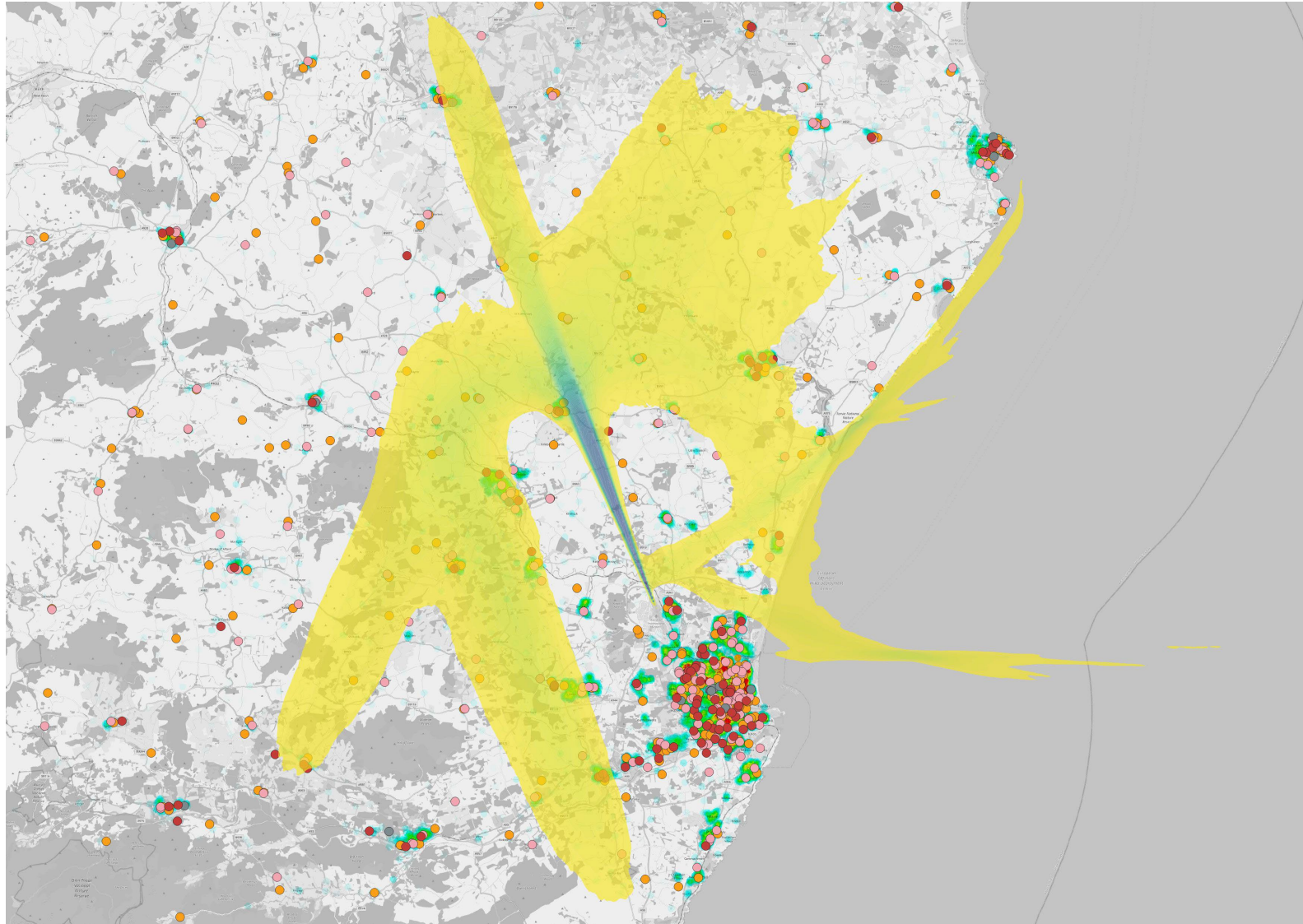
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Methodology Overview

For more information around the methodology, please see our Stage 2B Initial Options Appraisal document on the [CAA's Airspace Change Portal](#).

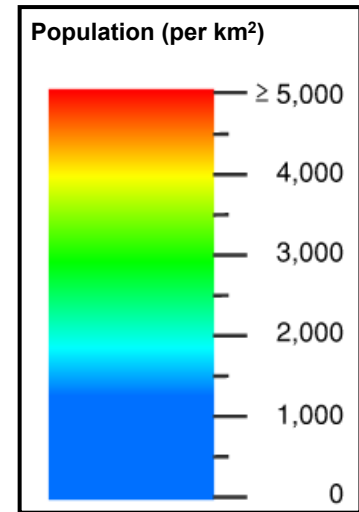
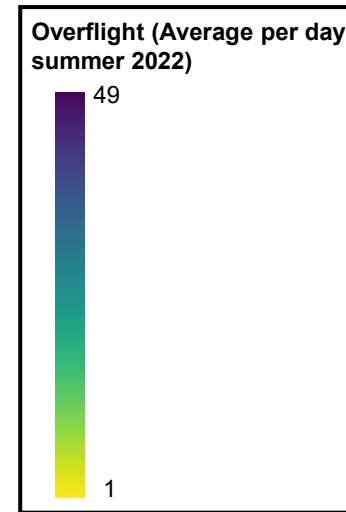
Data within this Technical Appendix	Overview of Methodology	Example of images/data shown within this document
<p>Heatmap Baseline (0-7000ft)</p>	<p>Based on actual 2022 NTK 92 day data (Average summer day) therefore shows the average vectoring swathe.</p> <p>Use the CAA's definition of overflight (48.5 degree)</p> <p>Not based on the optioneering tool therefore the data reflects the climb profiles of the full Aberdeen fleet mix</p> <p>Includes both helicopter and fixed wing traffic</p> <p>Presented with population density data and hospital/school/carehome/places of worship data</p>	
<p>Baseline Centerline Overflight Contours (0-5000ft)</p>	<p>Based on a single noise event i.e one arrival using the CAA's 48.5 degree definition of overflight.</p> <p>Aberdeen does not have published arrival routes prior to final approach and so the typical centrelines have been estimated based on NTK data, known waypoints and ATC input. The contours <u>do not</u> consider frequency of overflight.</p> <p>Baseline typical centreline data has been generated in order to offer an initial comparison between the baseline typical centrelines and the option's overflight contours. The data tables use 2021 CACI and point X data to identify noise sensitive sites and population.</p> <p>Overflight contours generated only from 0-5000ft due to the scope of the PBN procedures (see below).</p>	
<p>Option Overflight (0-5000ft)</p>	<p>Provides a comparison between the overflight contour of an option (shown with black outline), the vectoring heatmap, and the centreline typical baseline data (shaded grey). Centerline typical baseline as per above (shown shaded grey on the image). Heatmap also as per the above.</p> <p>Option overflight contour (black outline) based on a single overflight event i.e. one arrival using the CAA's 48.5 degree definition of overflight. Contours are generated using a standard AEDT descent profile of a Saab 340 aircraft however for the purposes of overflight, the aircraft type does not influence the shape/size of the contours as it will follow a 3° continuous descent approach. The contours do not consider the frequency of overflight.</p> <p>The overflight contours have been generated from 0-5000ft as this is within the scope of the PBN procedures which could be expected to begin from c. 5-4000ft. Prior to that altitude, arrivals would be vectored to the start of the procedure. The heatmap baseline data provides an indication on the anticipated vectoring patterns between 7000ft and joining the PBN options at c.5000ft.</p>	

Runway 16 Baseline - Heatmap



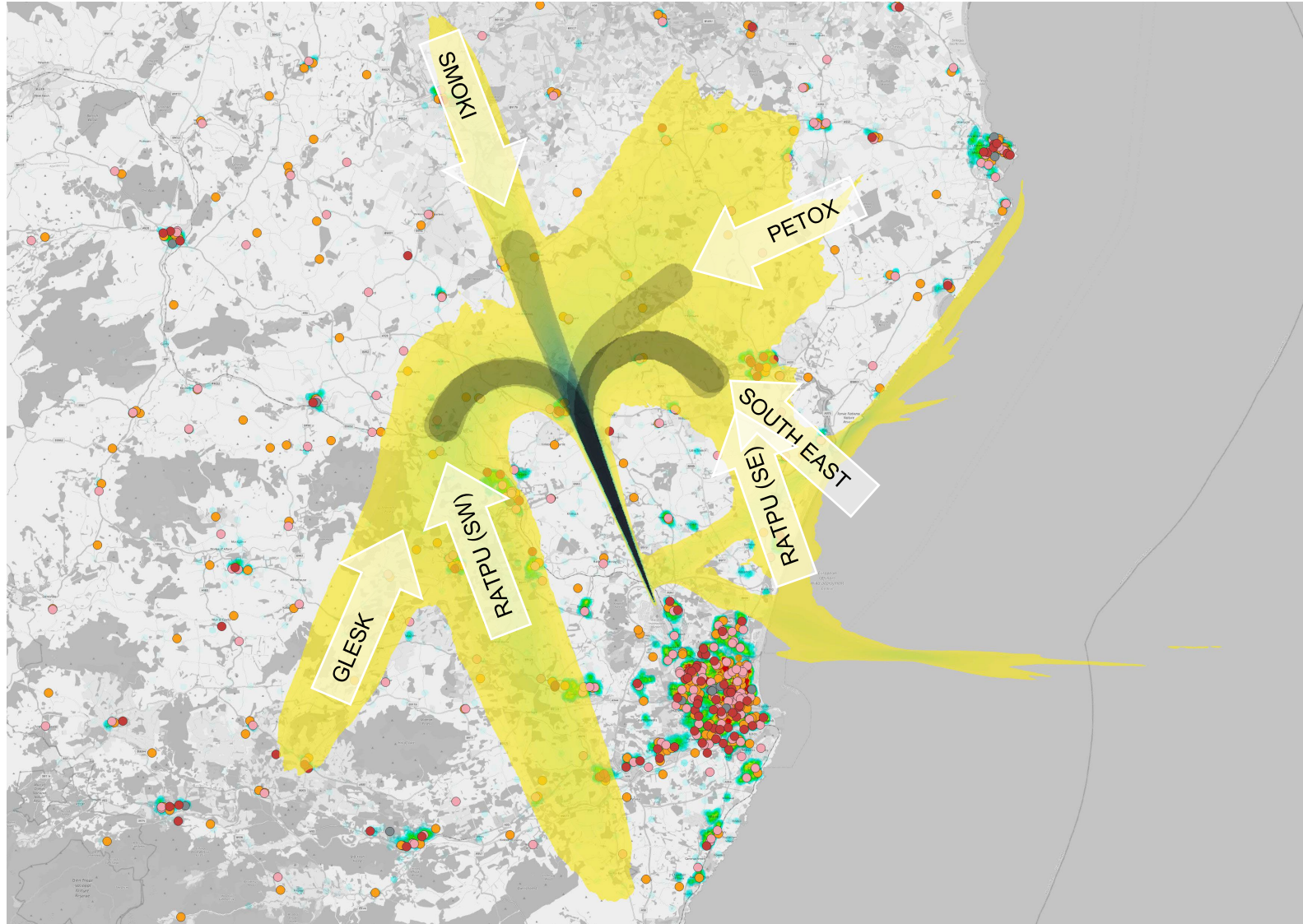
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- Carehomes
- Hospitals
- Schools
- Places of worship



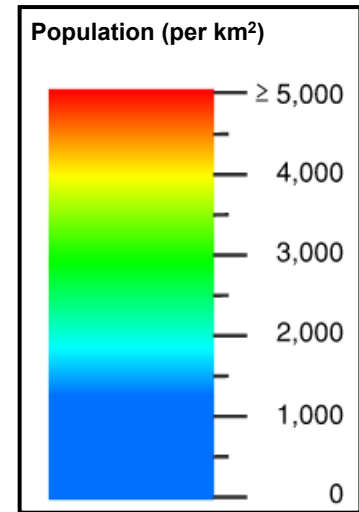
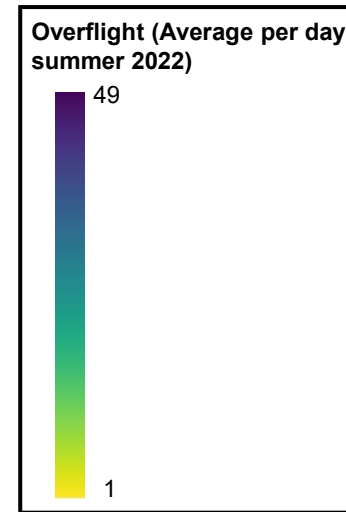
Runway 16 Baseline

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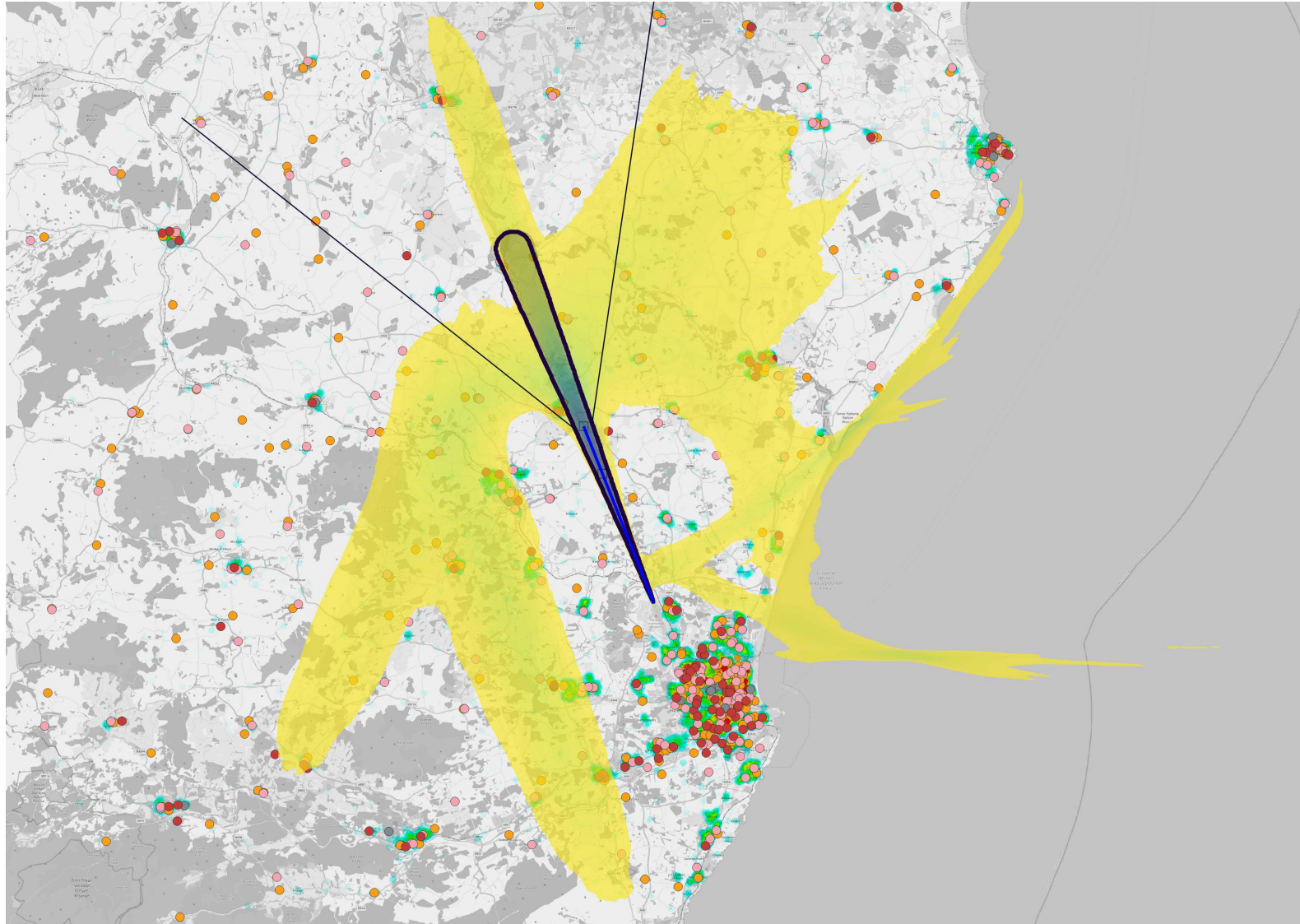
Baseline Typical Centreline (0-5000ft): Shaded grey

- Carehomes
- Hospitals
- Schools
- Places of worship



Runway 16 Option 1

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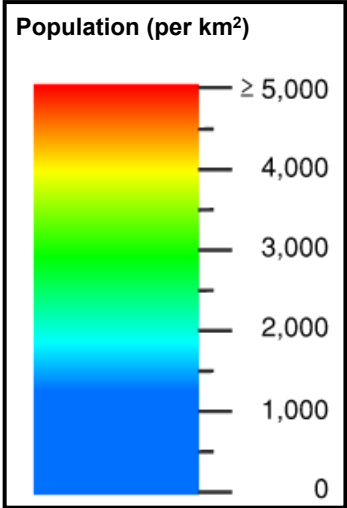
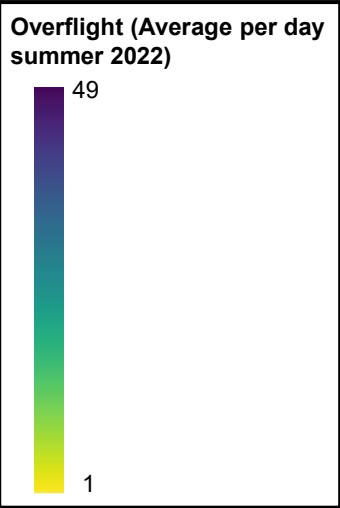


Vectoring joining area (30° either side of centreline): V shaped cone

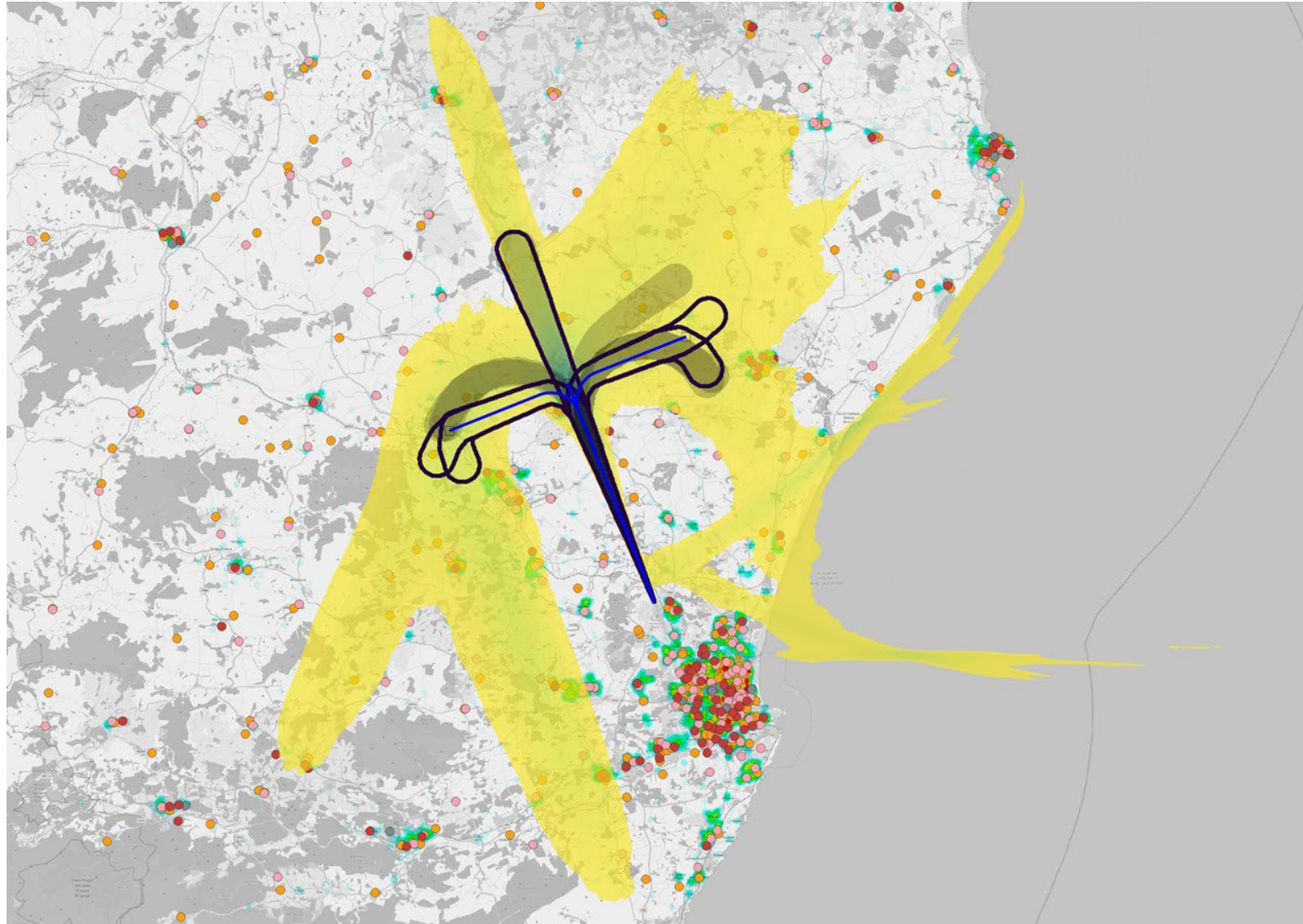
Baseline Typical Centreline (0-5000ft): Shaded grey

Option overflight contour (0-5000ft): Black outline

- Carehomes
- Hospitals
- Schools
- Places of worship



Runway 16 Option 2

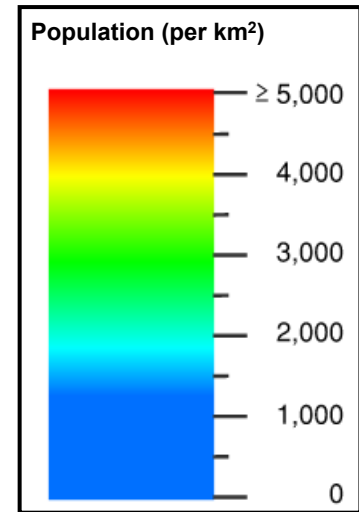
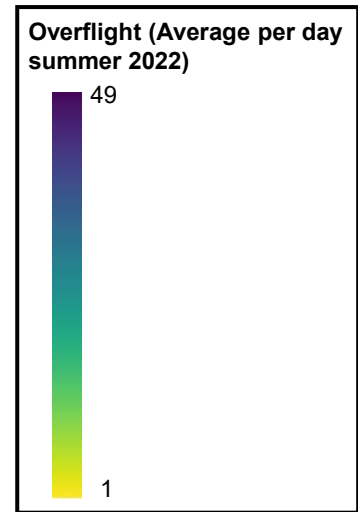


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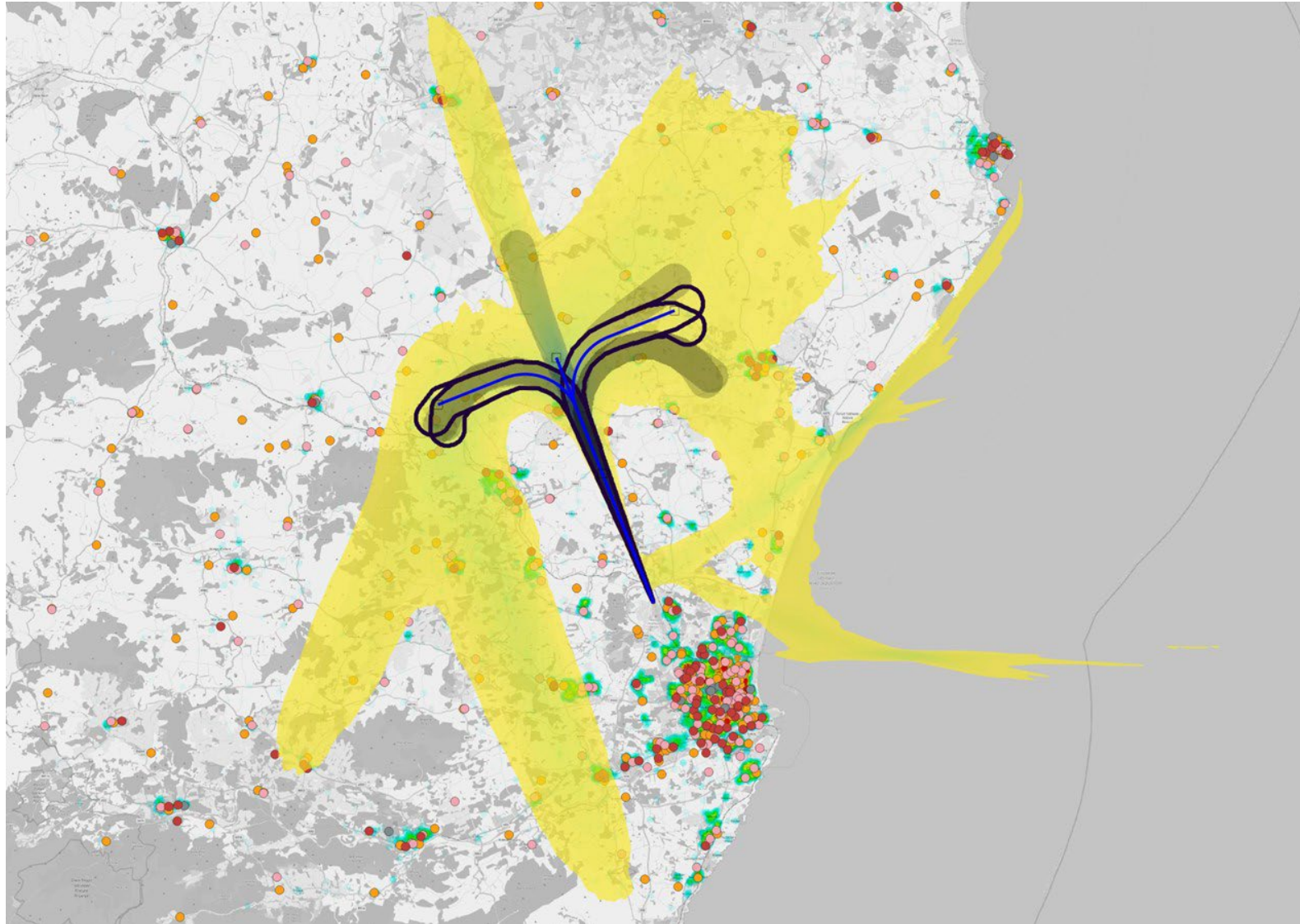
Baseline Typical Centreline (0-5000ft): Shaded grey

Option overflight contour (0-5000ft): Black outline

- Carehomes
- Hospitals
- Schools
- Places of worship



Runway 16 Option 3



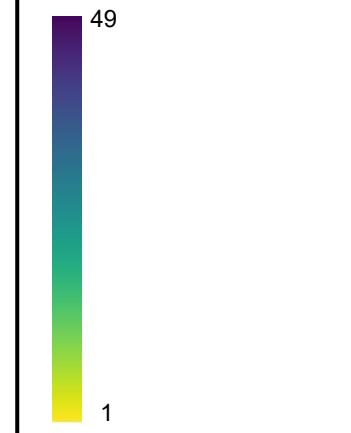
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Baseline Typical Centreline (0-5000ft): Shaded grey

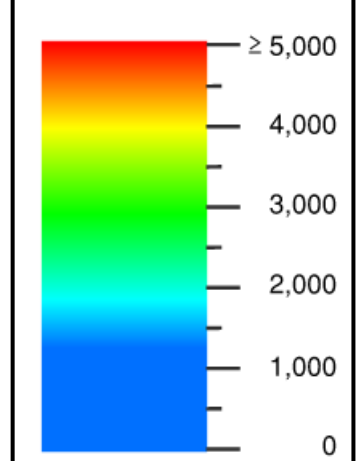
Option overflight contour (0-5000ft): Black outline

- Carehomes
- Hospitals
- Schools
- Places of worship

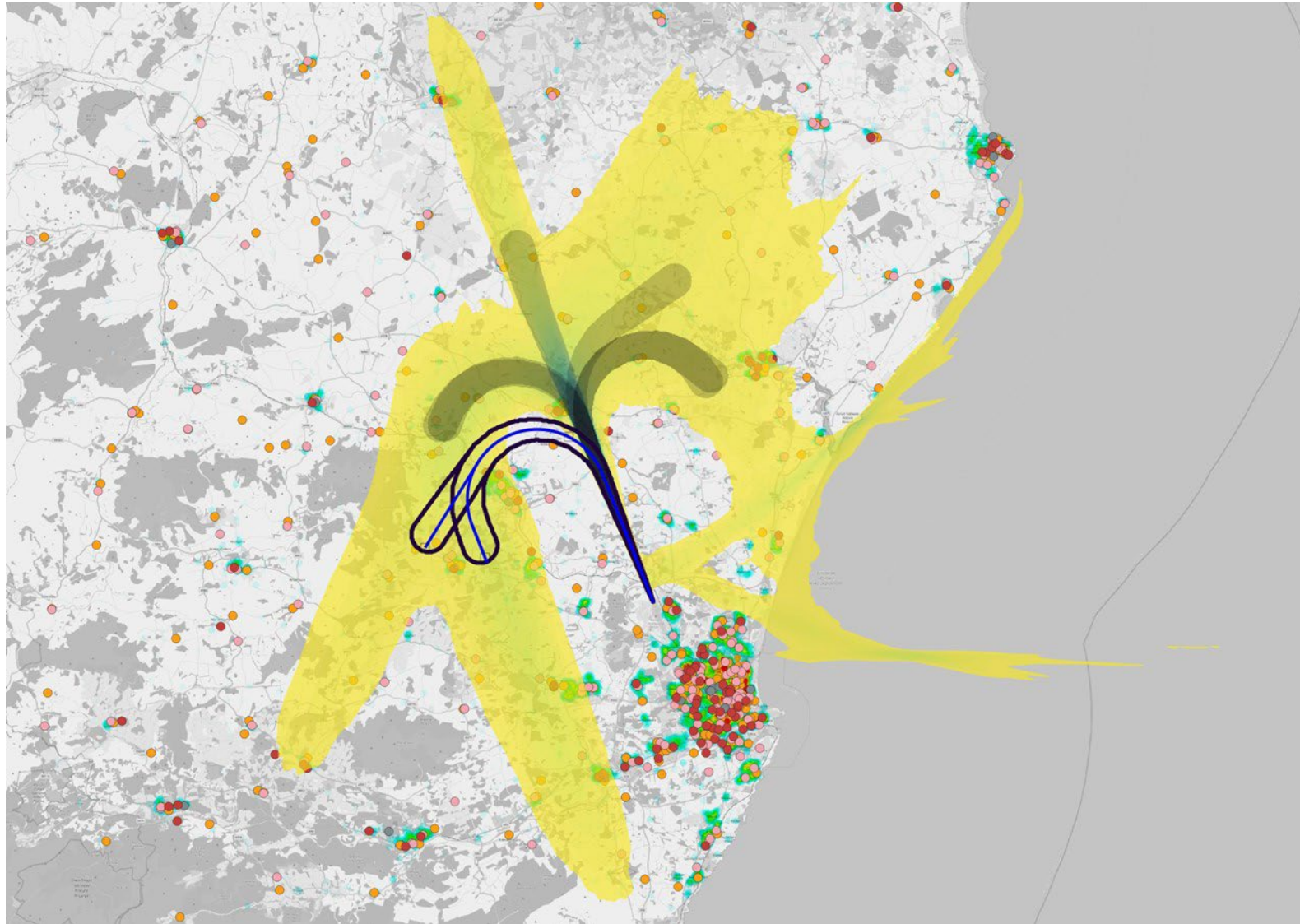
Overflight (Average per day summer 2022)



Population (per km²)



Runway 16 Option 4



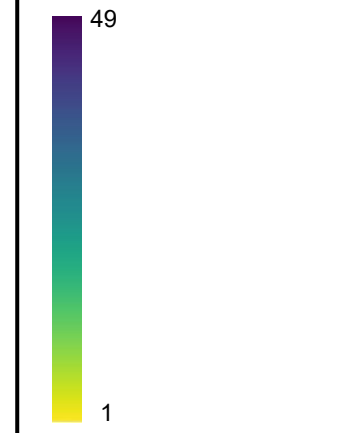
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Baseline Typical Centreline (0-5000ft): Shaded grey

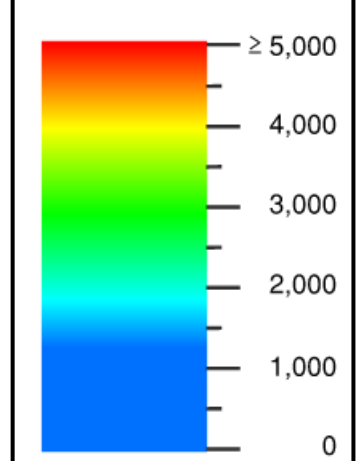
Option overflight contour (0-5000ft): Black outline

- Carehomes
- Hospitals
- Schools
- Places of worship

Overflight (Average per day summer 2022)

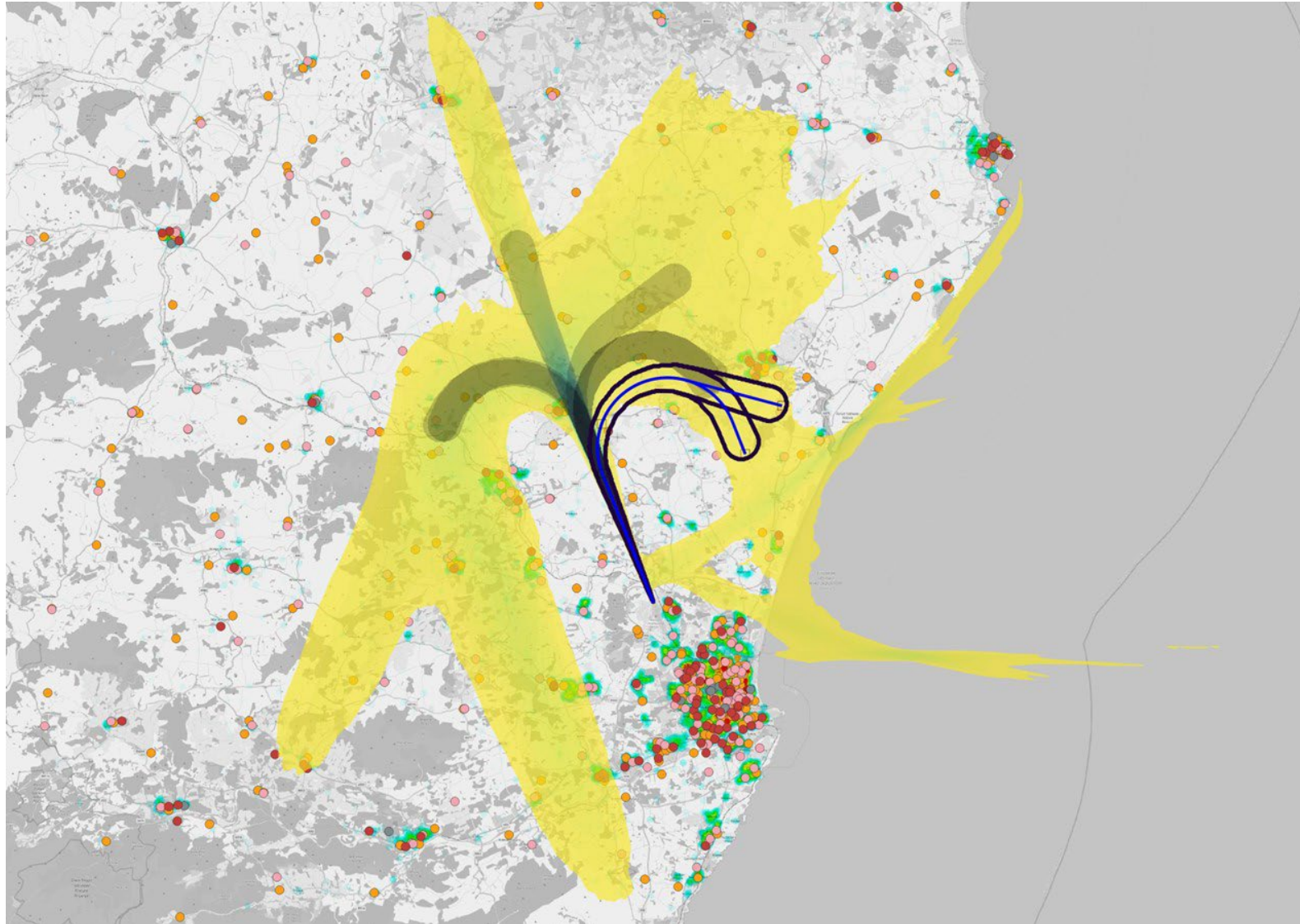


Population (per km²)



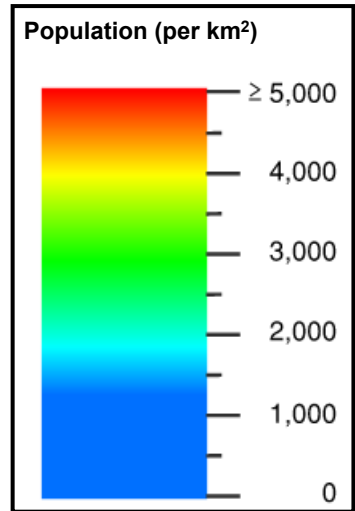
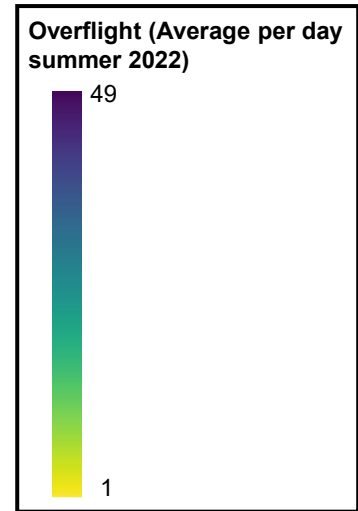
Runway 16 Option 5

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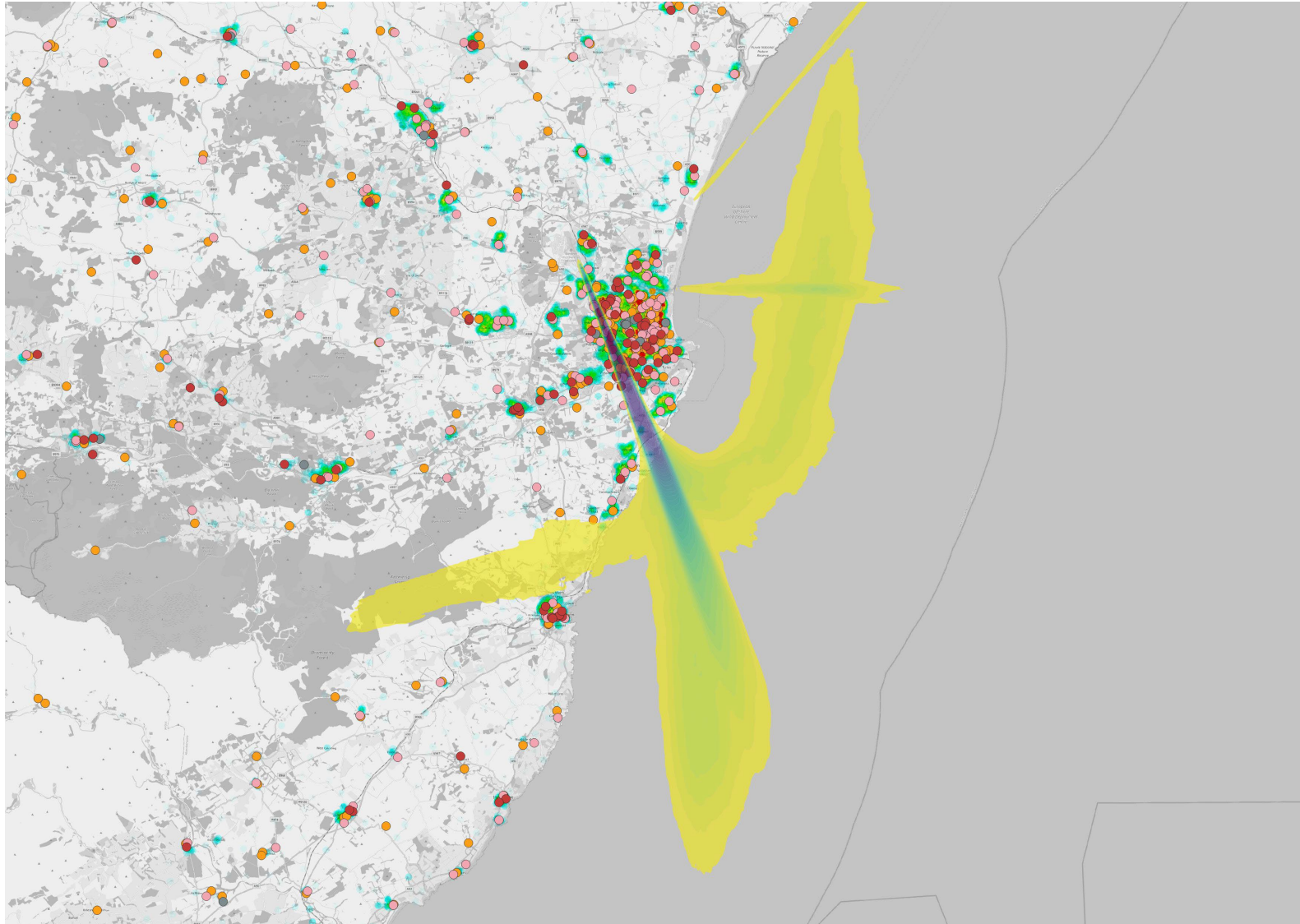
Baseline Typical Centreline (0-5000ft): Shaded grey
Option overflight contour (0-5000ft): Black outline

- Carehomes
- Hospitals
- Schools
- Places of worship

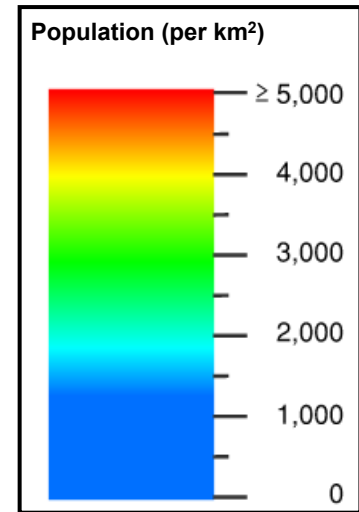
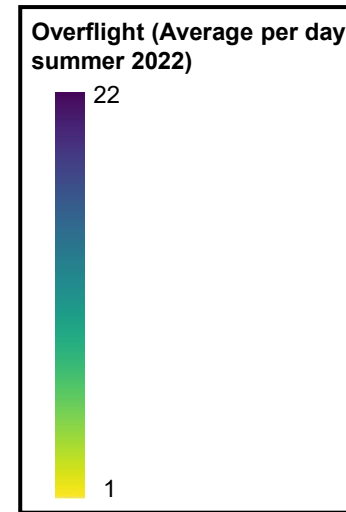


Runway 34 Baseline - Heatmap

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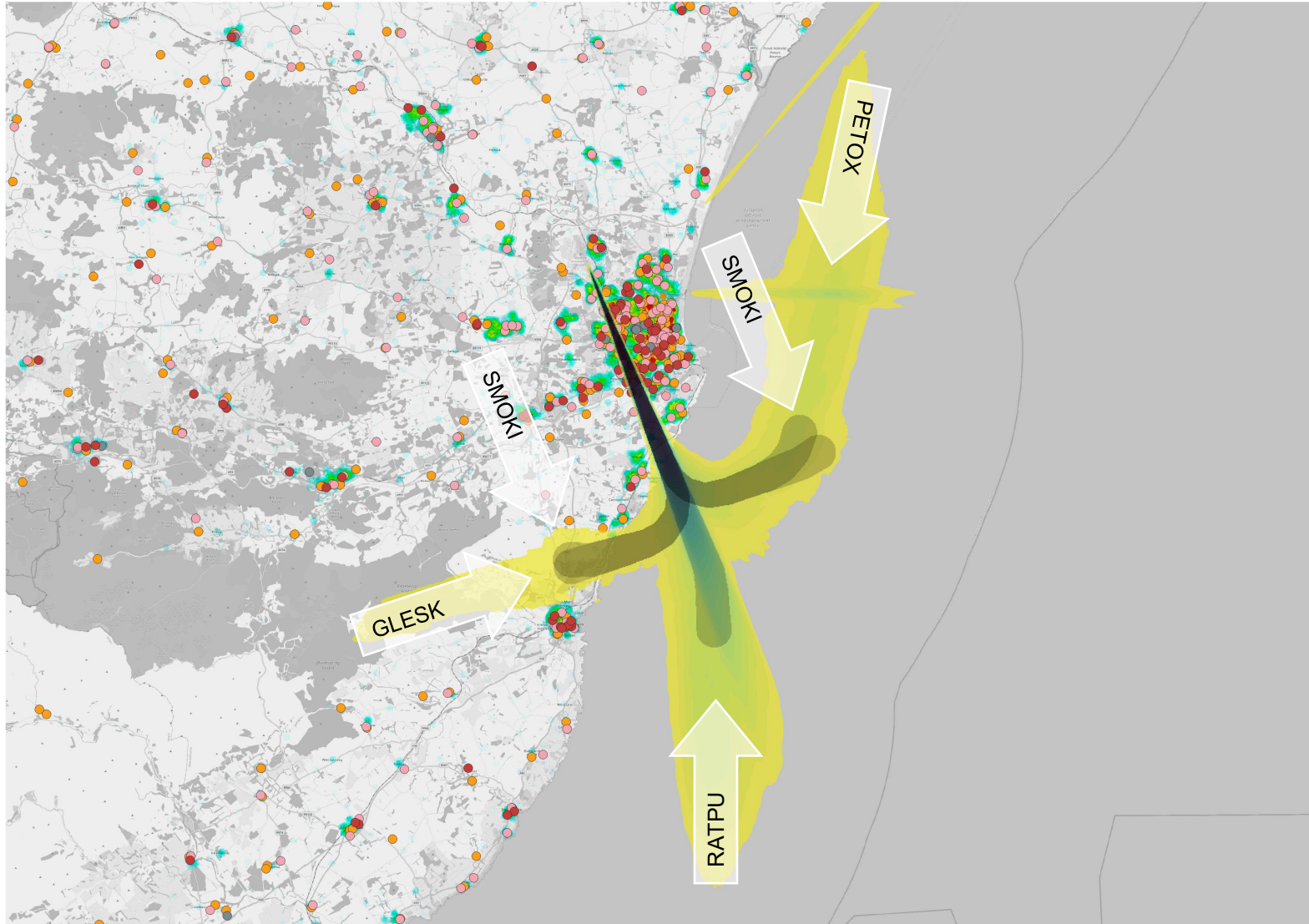


- Carehomes
- Hospitals
- Schools
- Places of worship



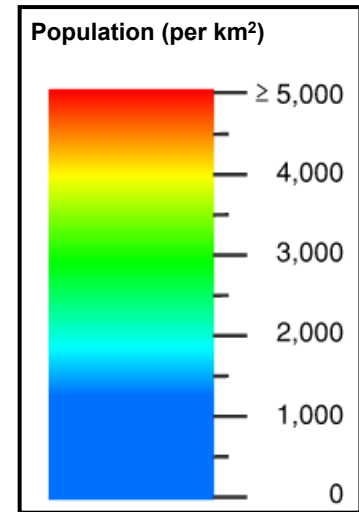
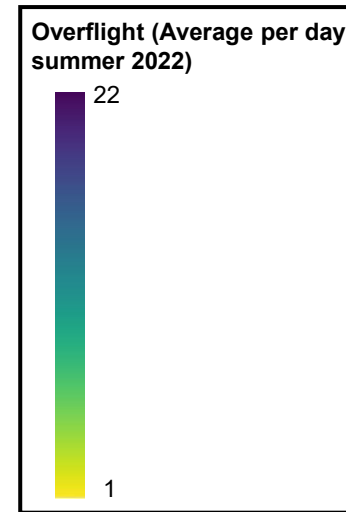
Runway 34 Baseline

Aberdeen International Airport



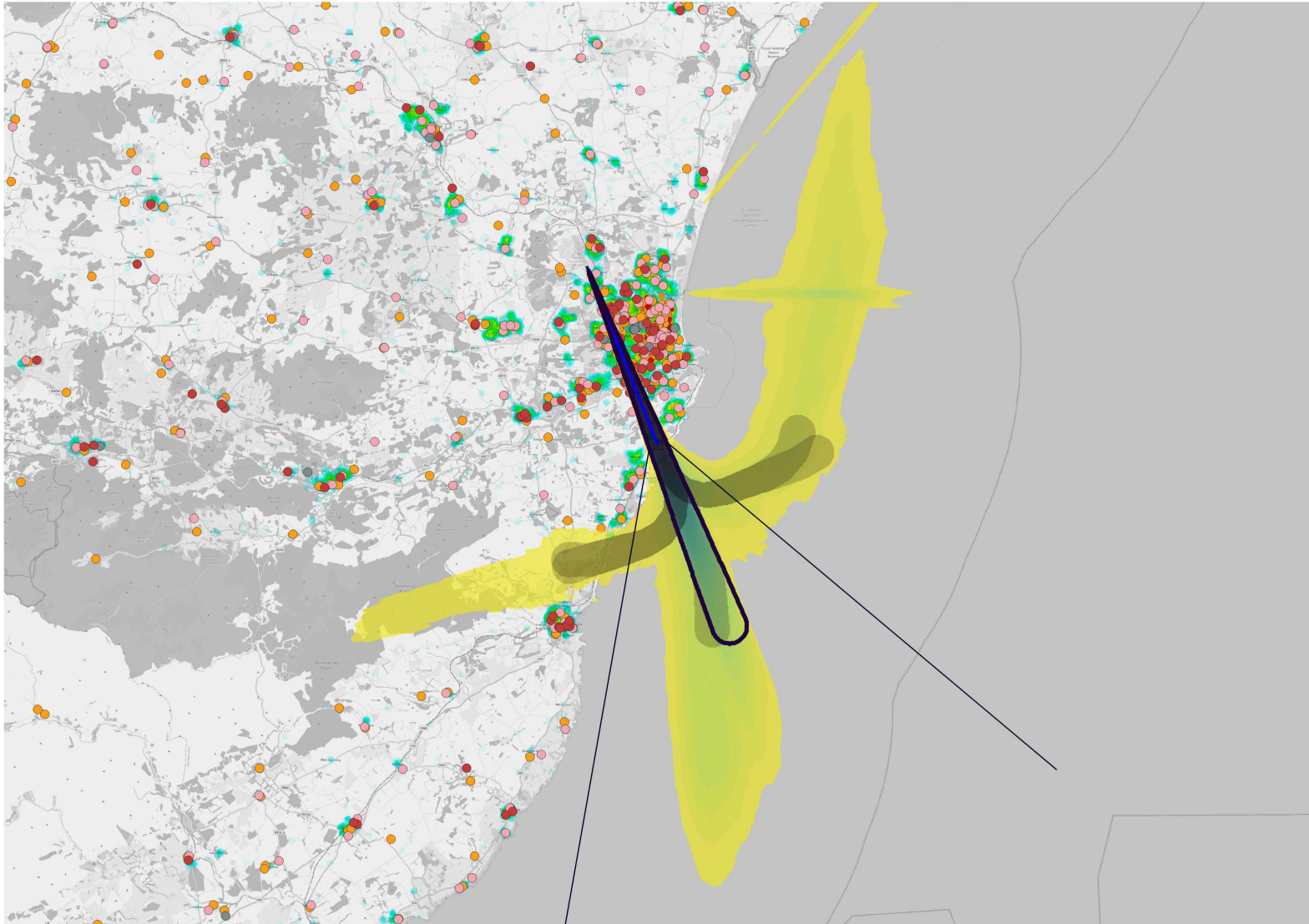
Baseline Typical Centreline (0-5000ft): Shaded grey

- Carehomes
- Hospitals
- Schools
- Places of worship



Runway 34 Option 1

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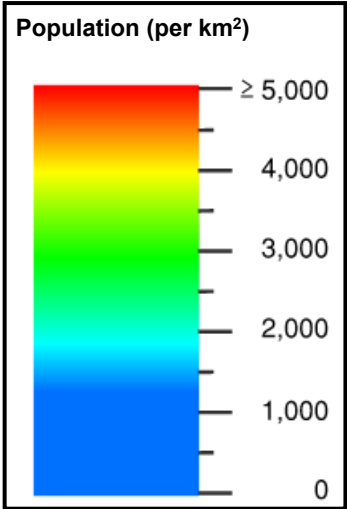
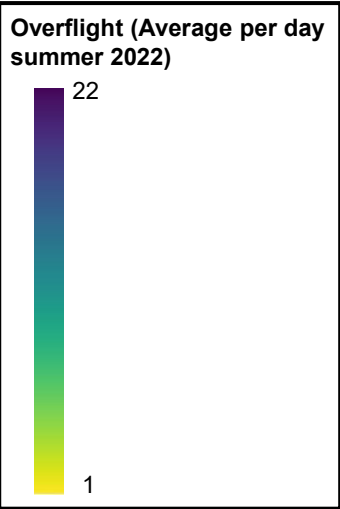


**Vectoring joining area
(30° either side of
centreline): V shaped cone**

**Baseline Typical Centreline
(0-5000ft): Shaded grey**

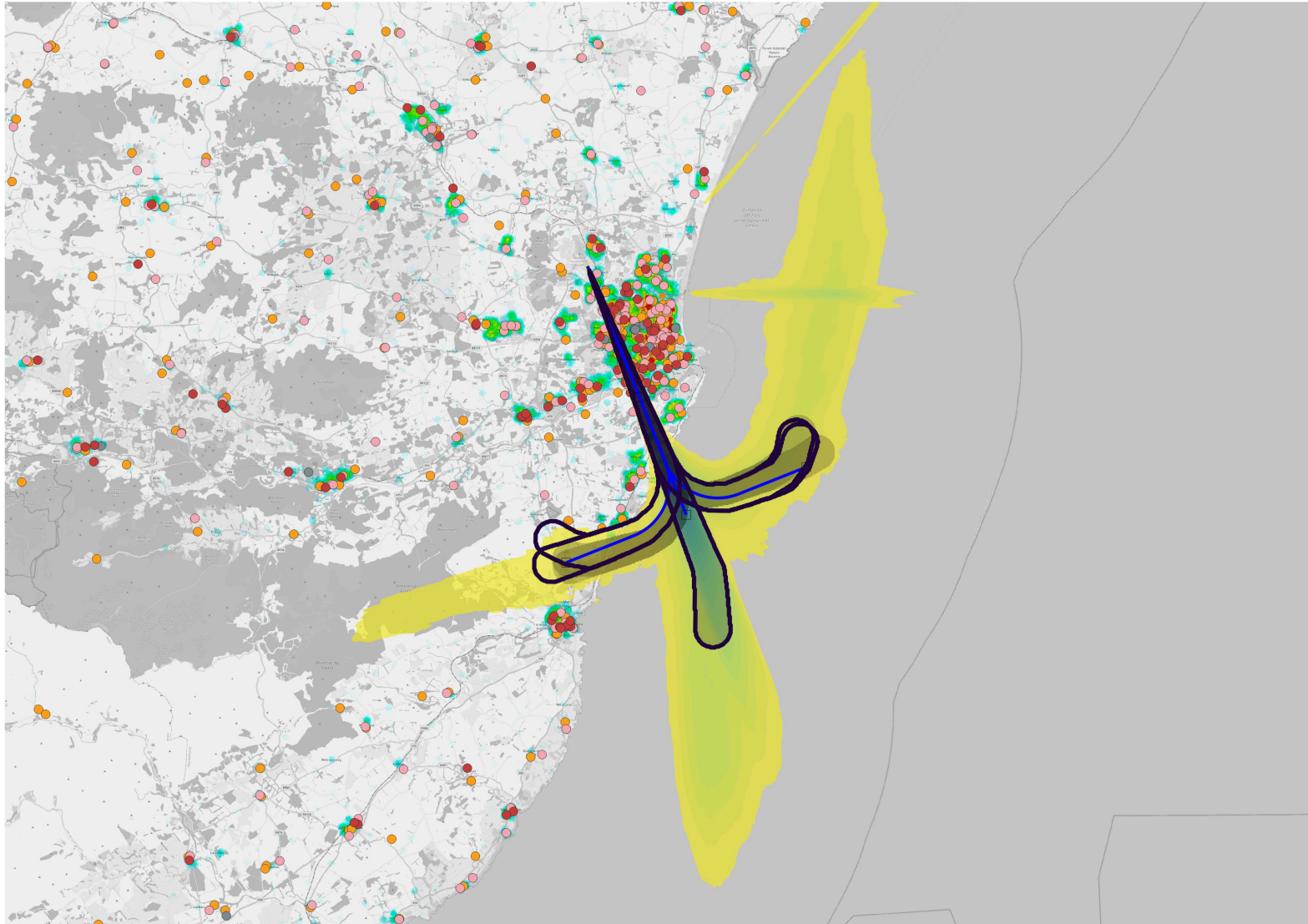
**Option overflight contour
(0-5000ft): Black outline**

- Carehomes
- Hospitals
- Schools
- Places of worship



Runway 34 Option 2

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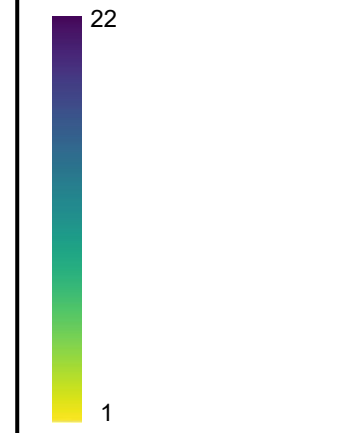


**Baseline Typical Centreline
(0-5000ft):** Shaded grey

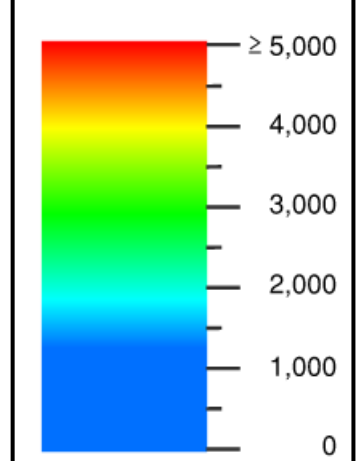
**Option overflight contour
(0-5000ft):** Black outline

- Carehomes
- Hospitals
- Schools
- Places of worship

**Overflight (Average per day
summer 2022)**

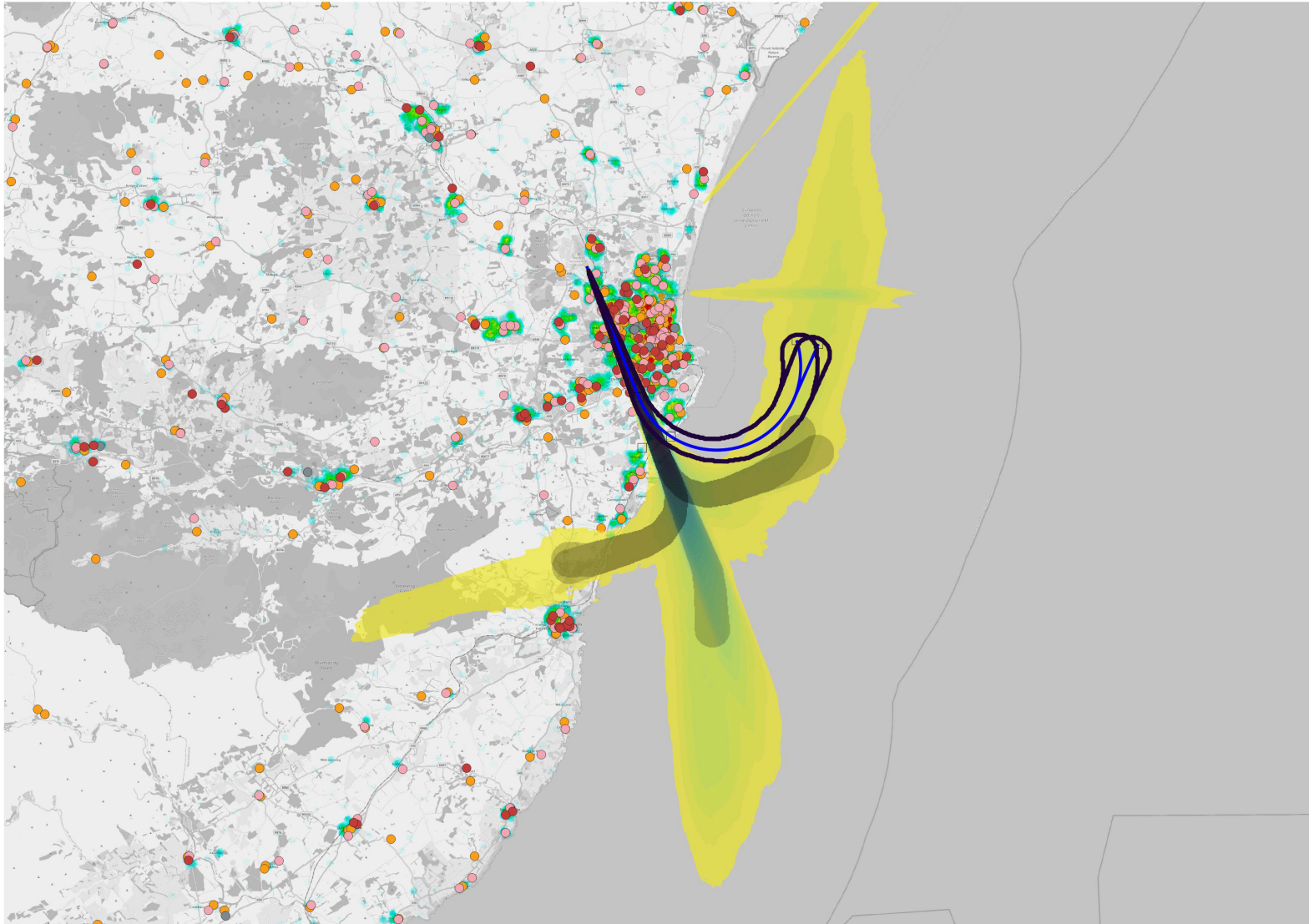


Population (per km²)



Runway 34 Option 3

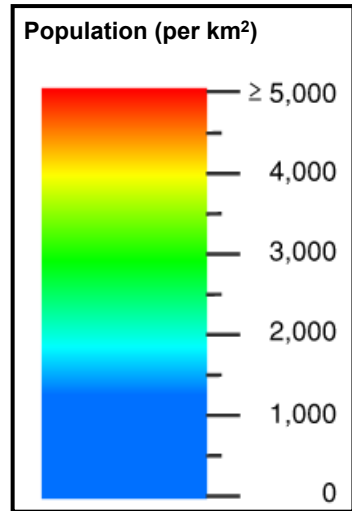
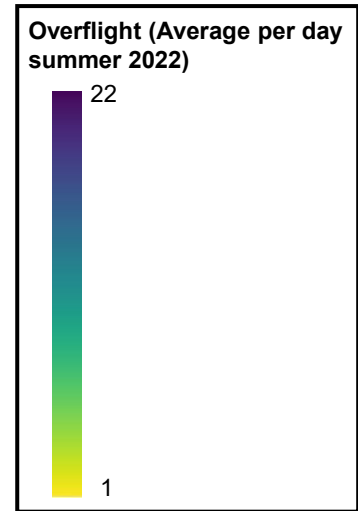
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Baseline Typical Centreline (0-5000ft): Shaded grey

Option overflight contour (0-5000ft): Black outline

- Carehomes
- Hospitals
- Schools
- Places of worship



Overflight counts Runway 16

For more information around the methodology, please see our Stage 2B Initial Options Appraisal document on the [CAA's Airspace Change Portal](#).

Option	Via waypoint	Area	Population	Schools count	Hospitals count	Carehomes count	Places of worship count
Baseline	RATPU (SOUTH EAST)	38	1309	1	0	0	1
	PETOX	38	542	0	0	0	1
	RATPU (SOUTH WEST)	38	1533	2	0	0	3
	GLESK	38	1676	1	0	0	4
	SMOKI	38	819	0	0	0	2
Option 1	SMOKI	38	906	1	0	0	3
Option 2	PETOX	38	1912	1	0	0	1
	RATPU (SOUTH EAST)	38	1735	1	0	0	1
	RATPU (SOUTH WEST)	37	1572	1	0	0	2
	GLESK	38	1785	1	0	0	3
Option 3	RATPU (SOUTH EAST)	38	698	0	0	0	0
	PETOX	38	710	0	0	0	1
	GLESK	38	1636	2	0	0	3
	RATPU (SOUTH WEST)	38	1574	2	0	0	3
	SMOKI	38	740	0	0	0	2
Option 4	RATPU (SOUTH WEST)	38	1042	0	0	1	0
	GLESK	38	791	0	0	1	1
Option 5	RATPU (SOUTH EAST)	38	405	0	0	1	0
Difference							
Option 1	SMOKI	0	+87	0	0	0	+1
Option 2	PETOX	0	+1370	+1	0	0	0
	RATPU (SOUTH EAST)	0	+426	0	0	0	0
	RATPU (SOUTH WEST)	0	+39	-1	0	0	-1
	GLESK	0	+109	0	0	0	-1
Option 3	RATPU (SOUTH EAST)	0	-611	-1	0	0	-1
	PETOX	0	+168	0	0	0	0
	GLESK	0	-40	+1	0	0	-1
	RATPU (SOUTH WEST)	0	+41	0	0	0	0
	SMOKI	0	-79	0	0	0	0
Option 4	RATPU (SOUTH WEST)	0	-491	-2	0	+1	-3
	GLESK	0	-885	-1	0	+1	-3
Option 5	RATPU (SOUTH EAST)	0	-904	-1	0	+1	-1

Overflight counts Runway 34

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Option	Via Waypoint	Area	Population	Schools count	Hospitals count	Carehomes count	Places of worship count
Baseline	PETOX	38	13694	7	0	5	7
	SMOKI (EAST)	38	13694	7	0	5	7
	SMOKI (WEST)	38	13905	7	0	5	7
	GLESK	38	13908	7	0	5	7
	RATPU	38	13694	7	0	5	7
Option 1	RATPU	38	13694	7	0	5	7
Option 2	PETOX	38	13694	7	0	5	7
	SMOKI (EAST)	38	13694	7	0	5	7
	GLESK	38	14209	7	0	5	7
	SMOKI (WEST)	38	14296	7	0	5	7
	RATPU	38	13694	7	0	5	7
Option 3	SMOKI (EAST)	38	13606	7	0	5	7
	PETOX	38	13606	7	0	5	7
Difference							
Option 1	RATPU	0	0	0	0	0	0
Option 2	PETOX	0	0	0	0	0	0
	SMOKI (EAST)	0	0	0	0	0	0
	GLESK	0	+301	0	0	0	0
	SMOKI (WEST)	0	+391	0	0	0	0
	RATPU	0	0	0	0	0	0
Option 3	SMOKI	0	-88	0	0	0	0
	PETOX	0	-88	0	0	0	0

Track Mileage

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Option	GLESK	SMOKI	RATPU	PETOX	
RWY 34 Do Nothing	35	63	29	44	
RWY 34 Option 1 Vectors to final approach	35	63	29	44	
RWY 34 Option 2 T Bar	34	62	29	44	
RWY 34 Option 3 Curved Approach from East	N/A	59	N/A	40	
RWY 16 Do Nothing	43	36	40	29	
RWY 16 Option 1 Vectors to final approach	43	36	40	29	
RWY 16 Option 2 Inner T Bar	41	36	39	29	
RWY 16 Option 3 Outer T Bar	43	36	41	30	
RWY 16 Option 4 Curved Approach from West	39	N/A	35	N/A	
RWY 16 Option 5 Curved Approach from East	N/A	N/A	38	N/A	
Difference	GLESK	SMOKI	RATPU	PETOX	Cumulative
RWY 34 Do Nothing	0	0	0	0	0
RWY 34 Option 1 Vectors to final approach	0	0	0	0	0
RWY 34 Option 2 T Bar	-1	-1	0	0	-2
RWY 34 Option 3 Curved Approach from East	N/A	-4	N/A	-4	-8
RWY 16 Do Nothing	0	0	0	0	0
RWY 16 Option 1 Vectors to final approach	0	0	0	0	0
RWY 16 Option 2 Inner T Bar	-2	0	-1	0	-3
RWY 16 Option 3 Outer T Bar	0	0	1	0	1
RWY 16 Option 4 Curved Approach from West	-4	N/A	-5	N/A	-9
RWY 16 Option 5 Curved Approach from East	N/A	N/A	-2	N/A	-2