

LAMP PIR

Bridging Module Analysis

Changes to population overflown by Modules A, B and C
Post-implementation of LAMP Phase 1A

Prepared by NATS Airspace Change Assurance (JRJB)

For publication

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Commentary and Methodology



This is a broad illustration of the change in population overflown due to these LAMP Modules.

1. In the analysis tool “Luciad ATC Playback”, trajectory density plots were generated for flights up to 4,000ft, and from 4,000ft to 7,000ft.
2. The areas overflown on a regular basis (more than 5 flights per day, represented by the continuous areas of yellow density colour) were traced around by hand within the analysis tool.
The resulting shapes represent estimates of the areas directly overflown regularly.
3. People *not* directly under the flightpath are impacted by aircraft. CAA document CAP1498 provides guidance on the definition of overflight, based on the path described by downward-facing cones projected from the track of aircraft. The higher an aircraft is, the wider the path described by the cone, but also the lower the noise level.
4. The 48.5° “wide cone” was used to create shapes encompassing the appropriate CAP1498 overflight areas.
5. For flights up to 4,000ft a buffer of 1,079m was applied around the outside of the shapes traced in Step 2.
For flights 4,000ft to 7,000ft, a buffer of 1,888m was applied.
6. These shapes were transferred to a separate tool which extracts the postcodes within.
7. Census data for populations living in those extracted postcodes was counted, for “before” and “after”.

Notes:

Traffic samples: June 2013 (before the change), August 2016 (after the change).

Information on the data samples, including the colour key for the density bands, are described fully in the commentary supplied for the trajectory plots in each Module.

Population data (CACI 2011 census data with 2015 update)

Module A: Stansted

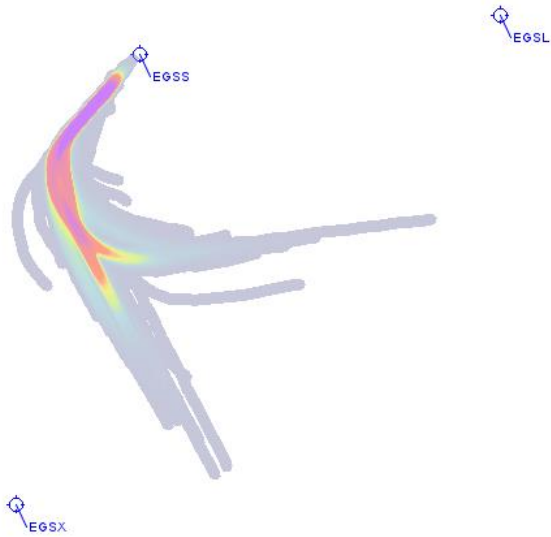
CLN and DET SID change of use

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Westerly departures Before (Jun 2013)



After (Aug 2016)

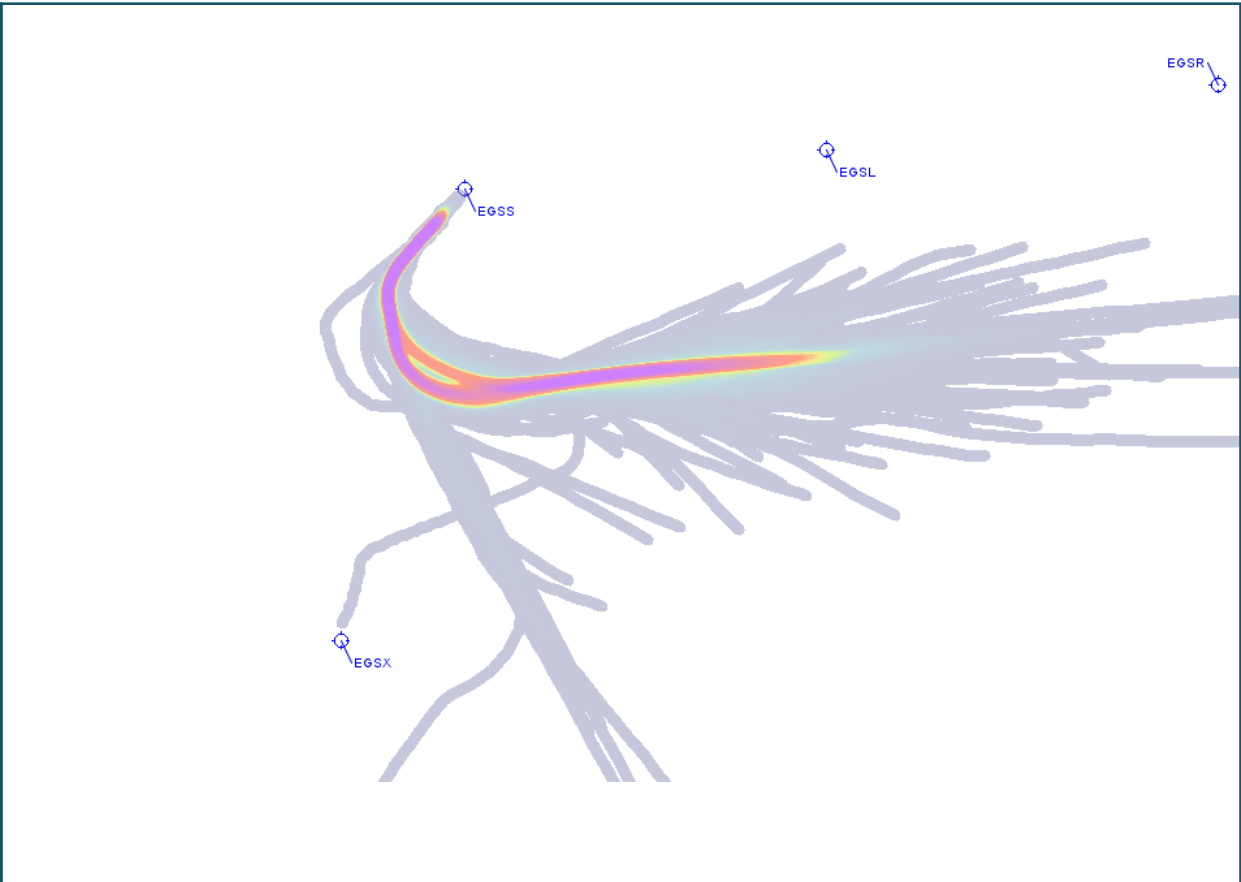
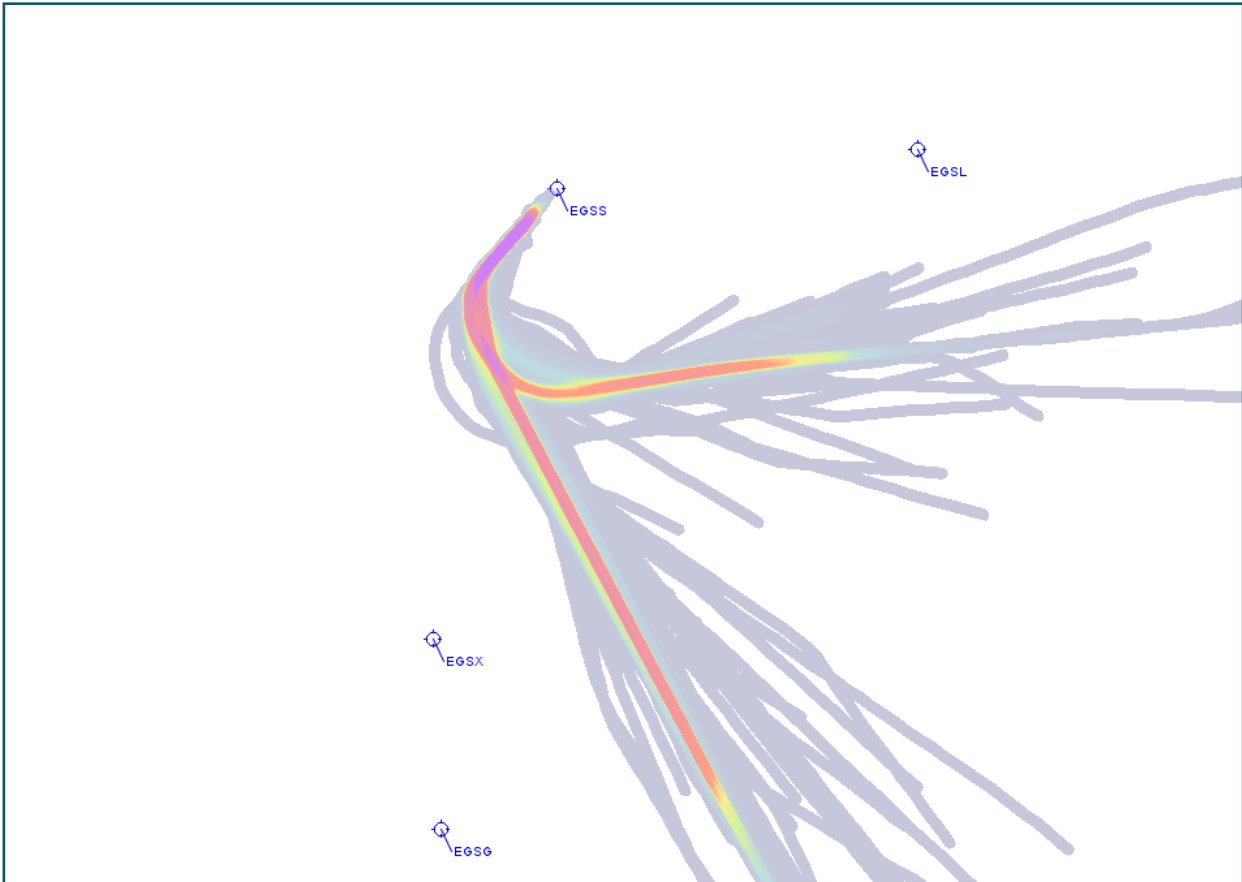


Trajectory Density < 4,000ft

Westerly departures Before



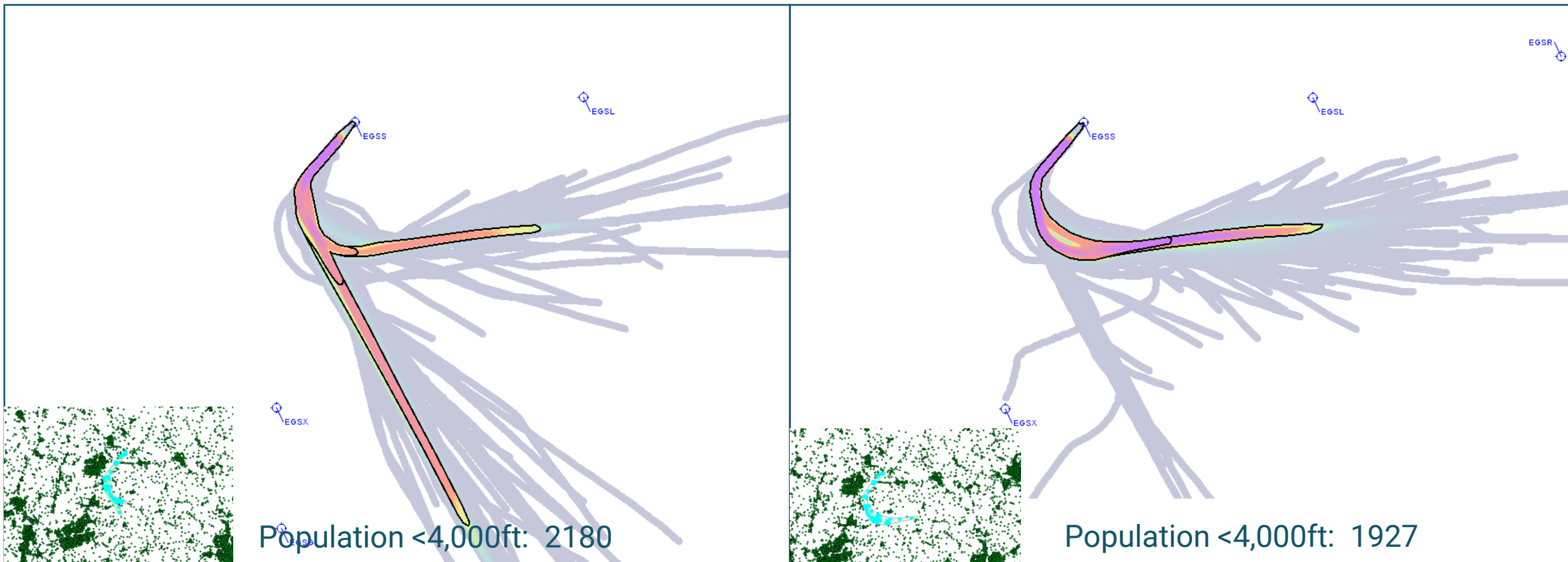
After



Trajectory Density < 7,000ft

Westerly departures Before

After



Population <4,000ft: 2180

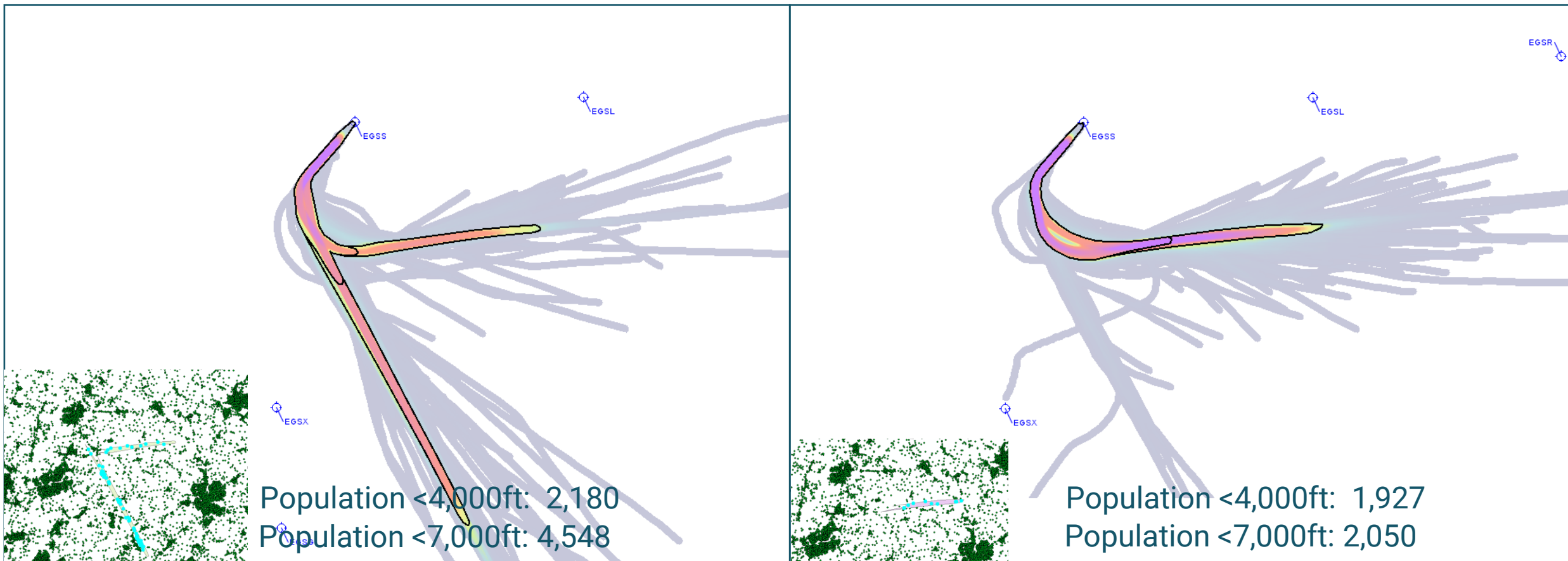
Population <4,000ft: 1927

Outline of core areas overflown < 4,000ft

253 fewer people overflown (-12%)

Westerly departures Before

After



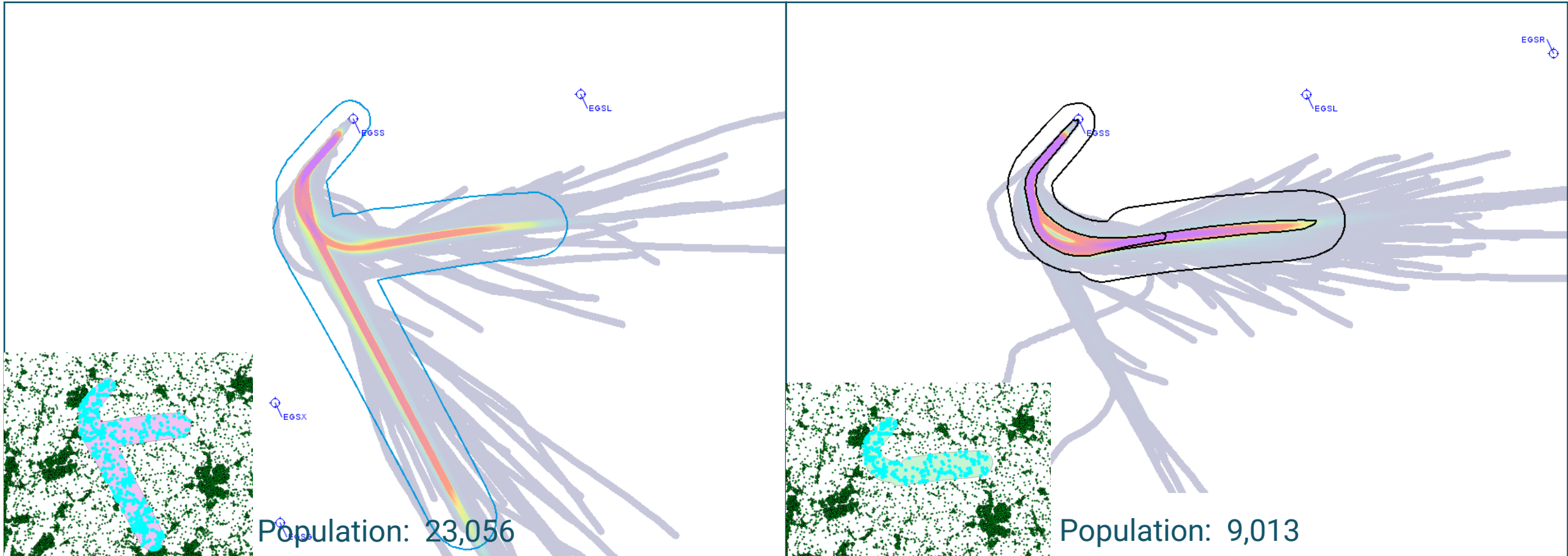
Outline of core areas overflown < 7,000ft

2,498 fewer people overflown (-55%)

Westerly departures Before



After



CAP1498 buffer areas overflown < 7,000ft **14,043 fewer people overflown (-61%)**

Easterly departures Before (Jun 2013)

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After (Aug 2016)

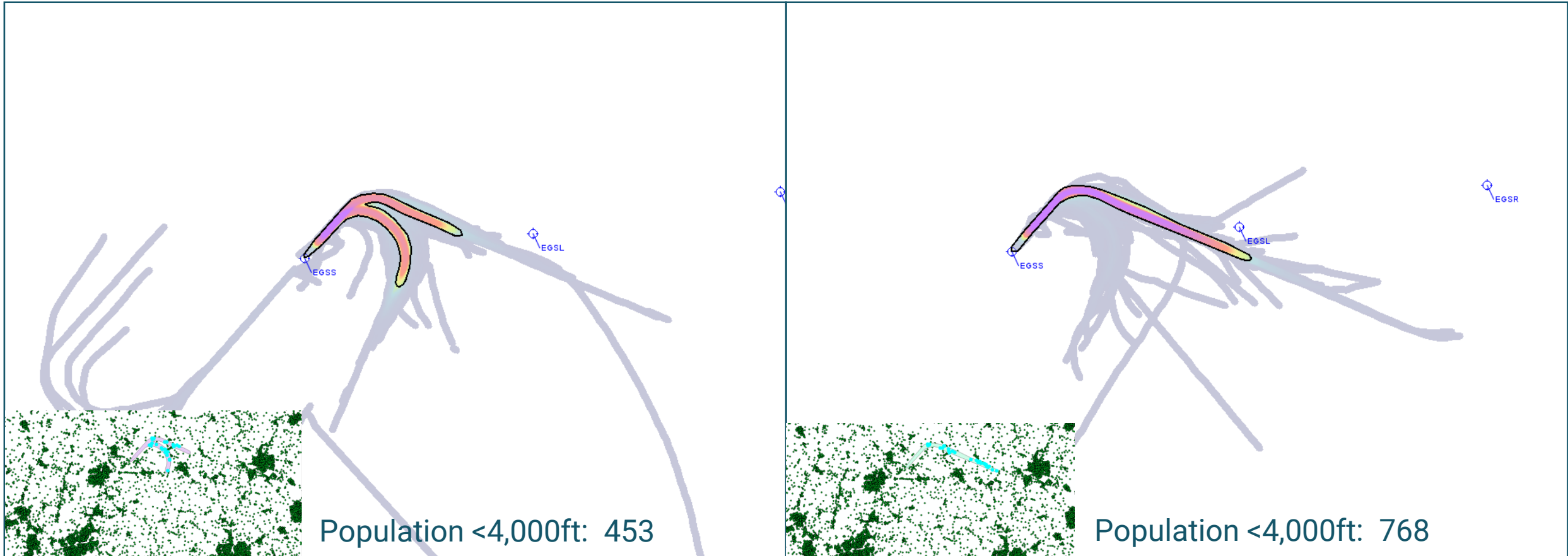


Trajectory Density < 4,000ft

Easterly departures Before



After



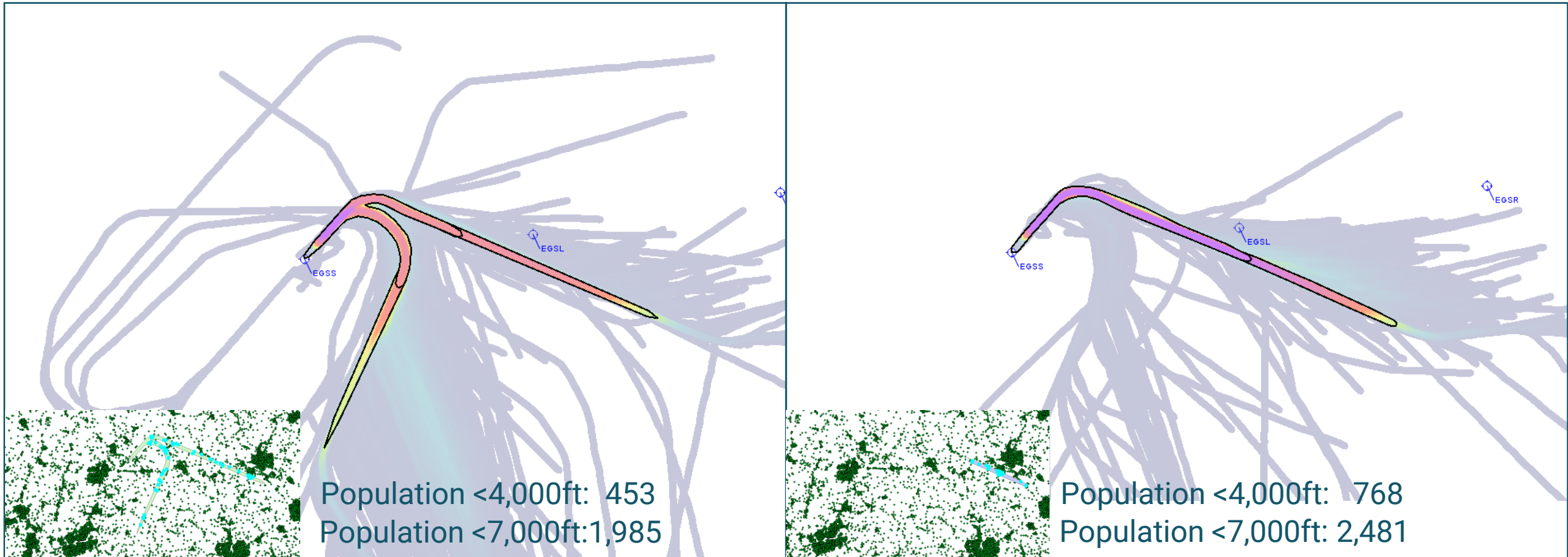
Outline of core areas overflown < 4,000ft

315 more people overflown (+70%)

Easterly departures Before



After



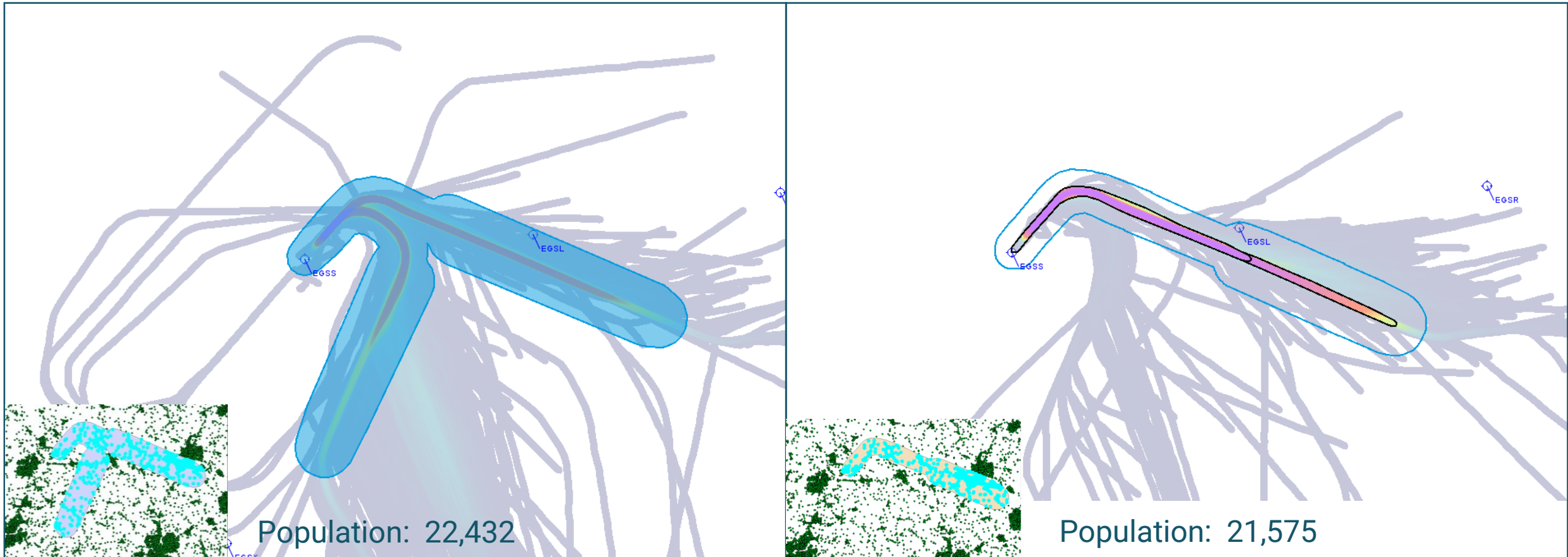
Outline of core areas overflown < 7,000ft

496 more people overflown (+25%)

Easterly departures Before



After



CAP1498 buffer areas overflown < 7,000ft

856 fewer people overflown (-4%)

Overview



E Deps	Old	New	Delta	delta %
<4000	453	768	315	+70%
<7000	1,532	1,713	181	+12%
both	1,985	2,481	496	+25%
CAP1498	22,432	21,576	- 856	-4%
W Deps	Old	New	Delta	delta %
<4000	2,180	1,927	- 253	-12%
<7000	2,368	123	- 2,245	-95%
both	4,548	2,050	- 2,498	-55%
CAP1498	23,056	9,013	- 14,043	-61%

Module B, C: London City

RNAV1 Replications

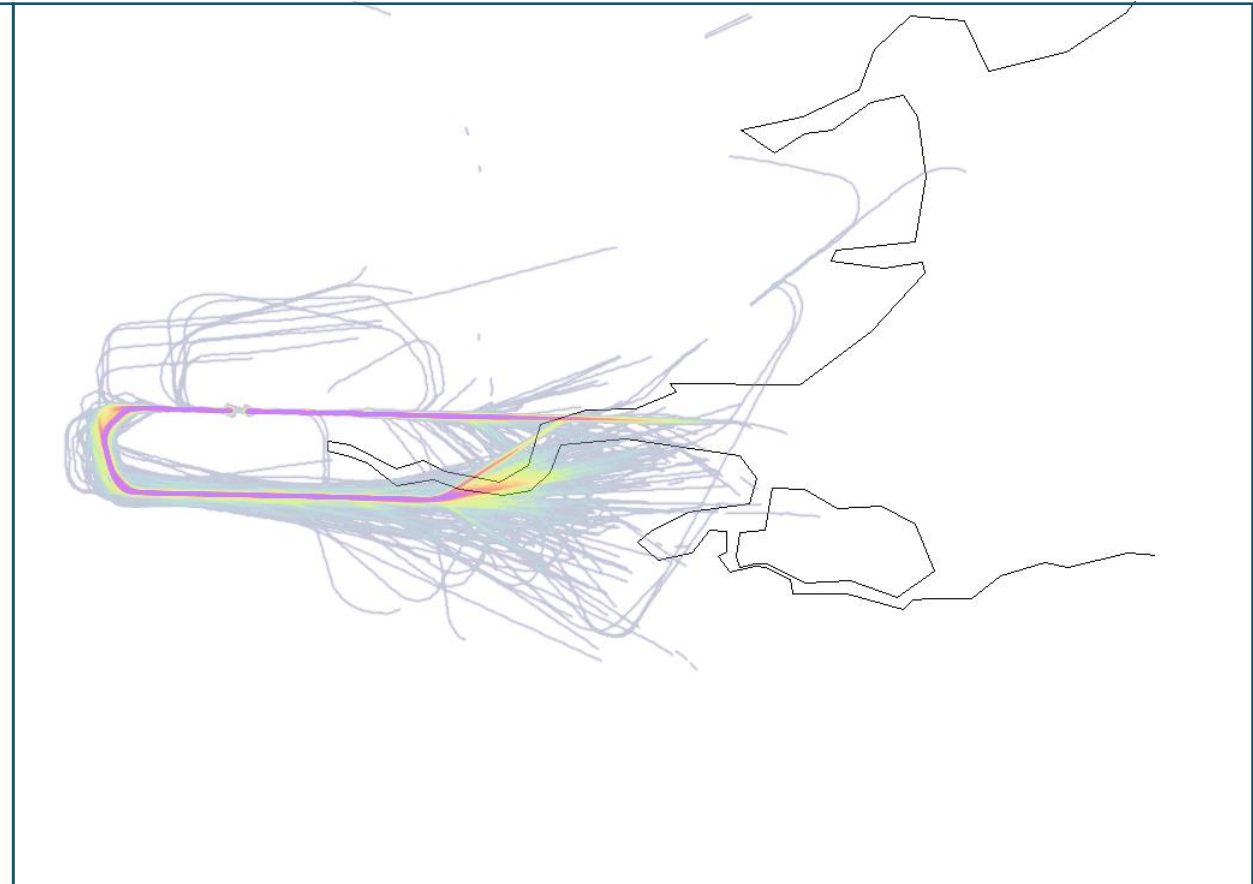
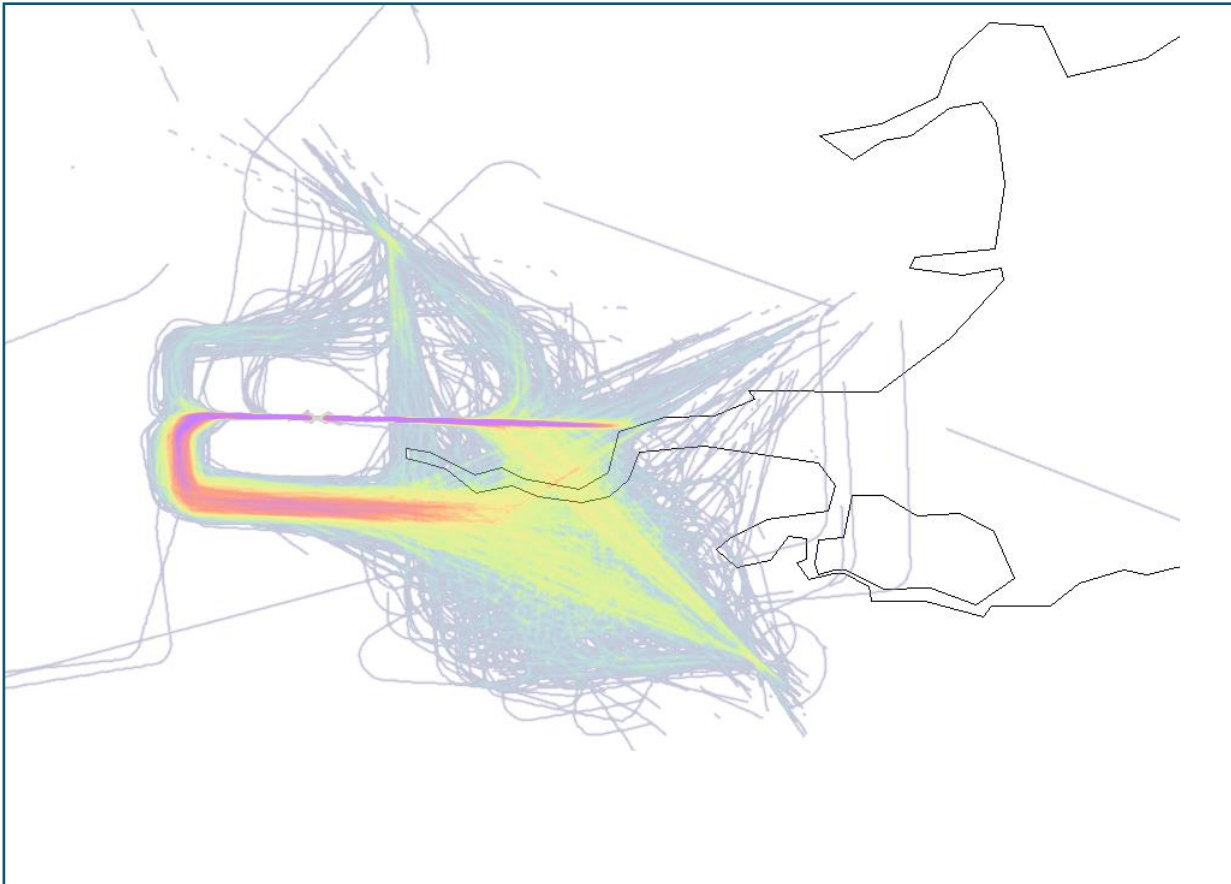
Point Merge Structure

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Arrivals
Before (Jun 2013)

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After (Aug 2016)

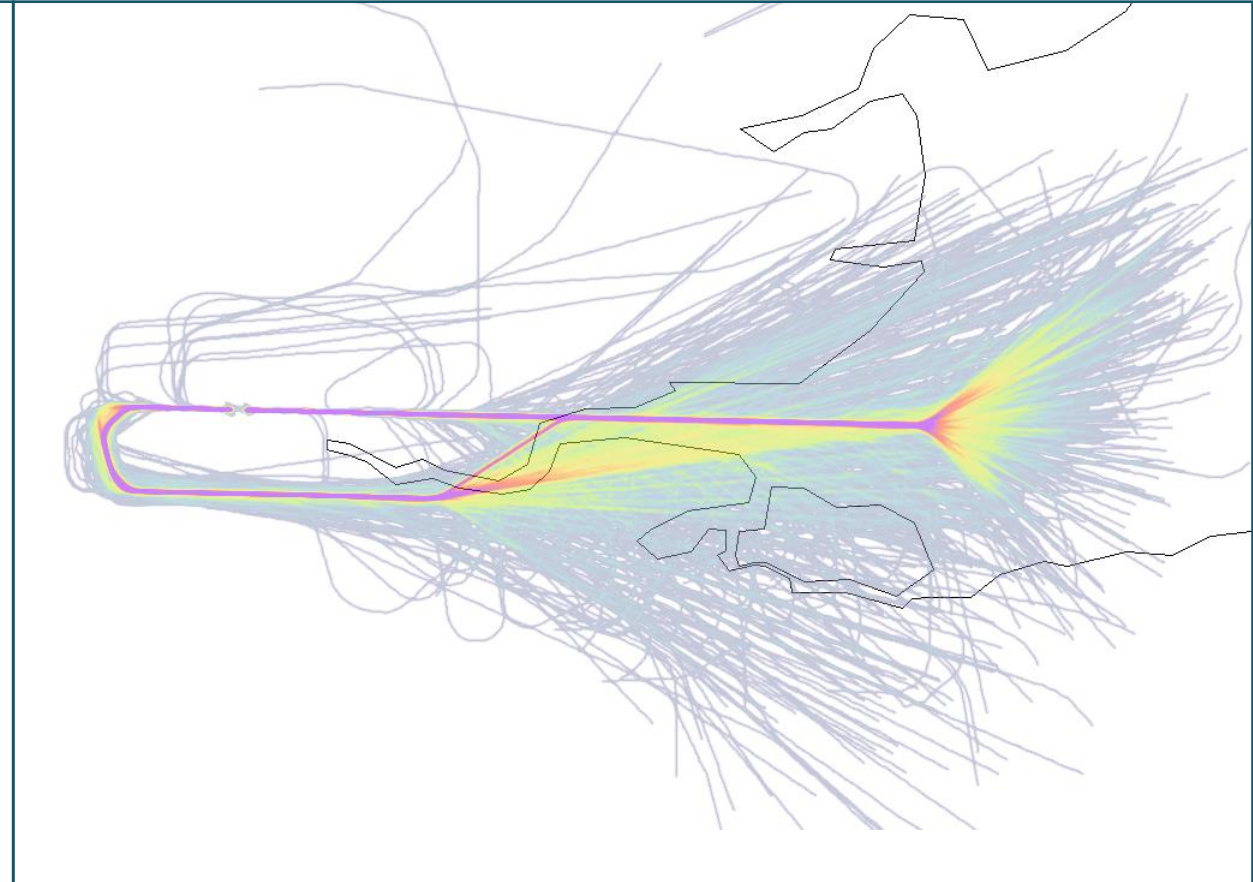
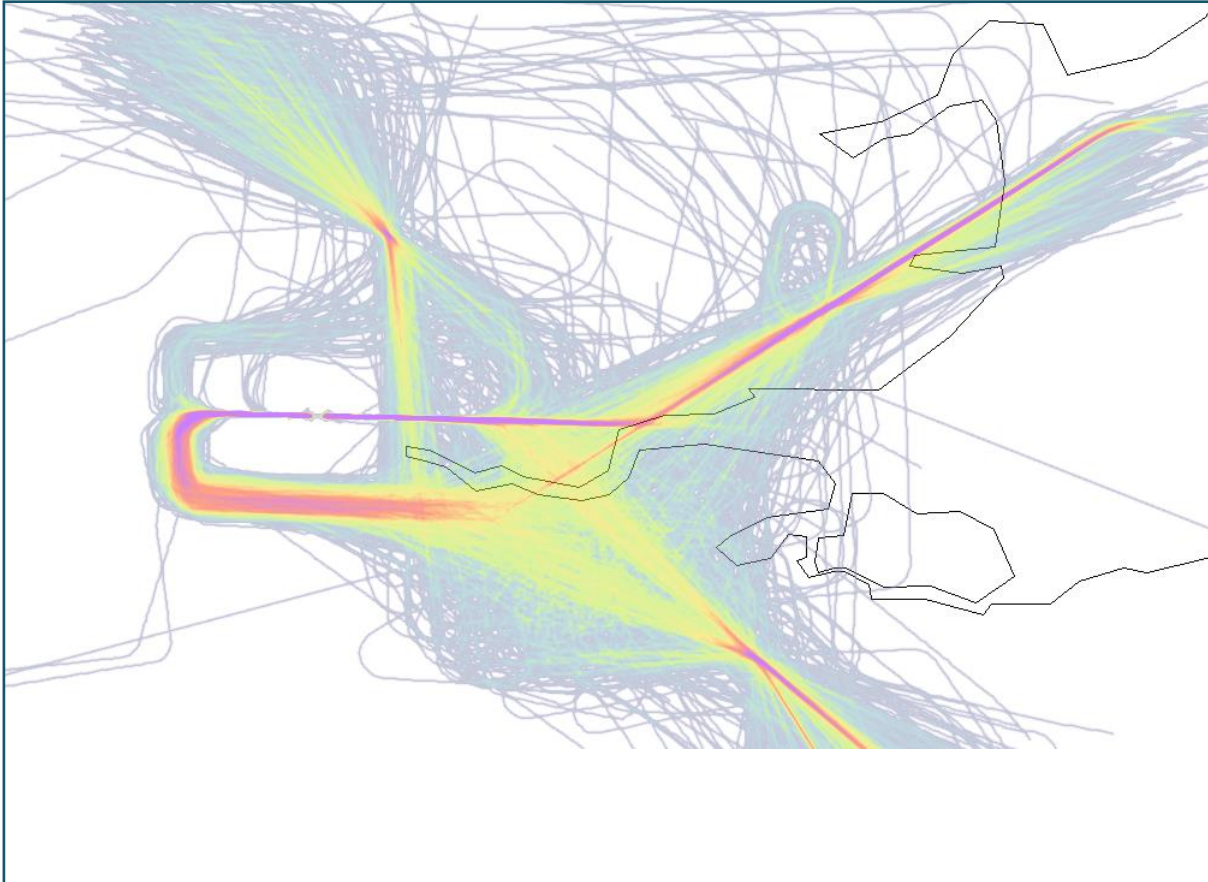


Trajectory Density < 4,000ft

Arrivals
Before

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After

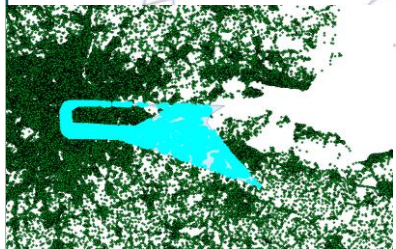
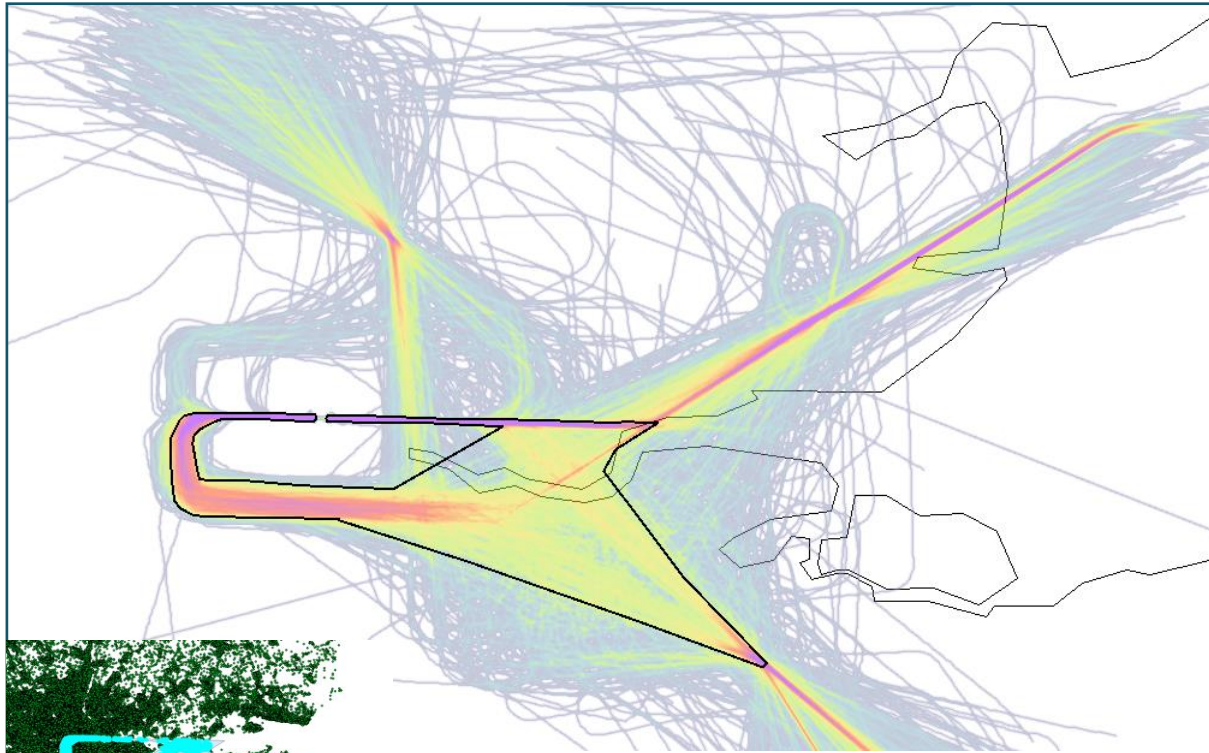


Trajectory Density < 7,000ft

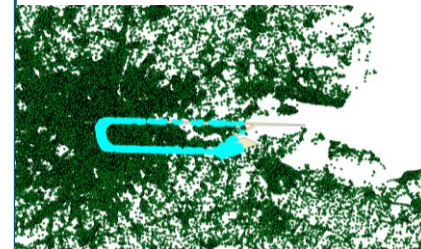
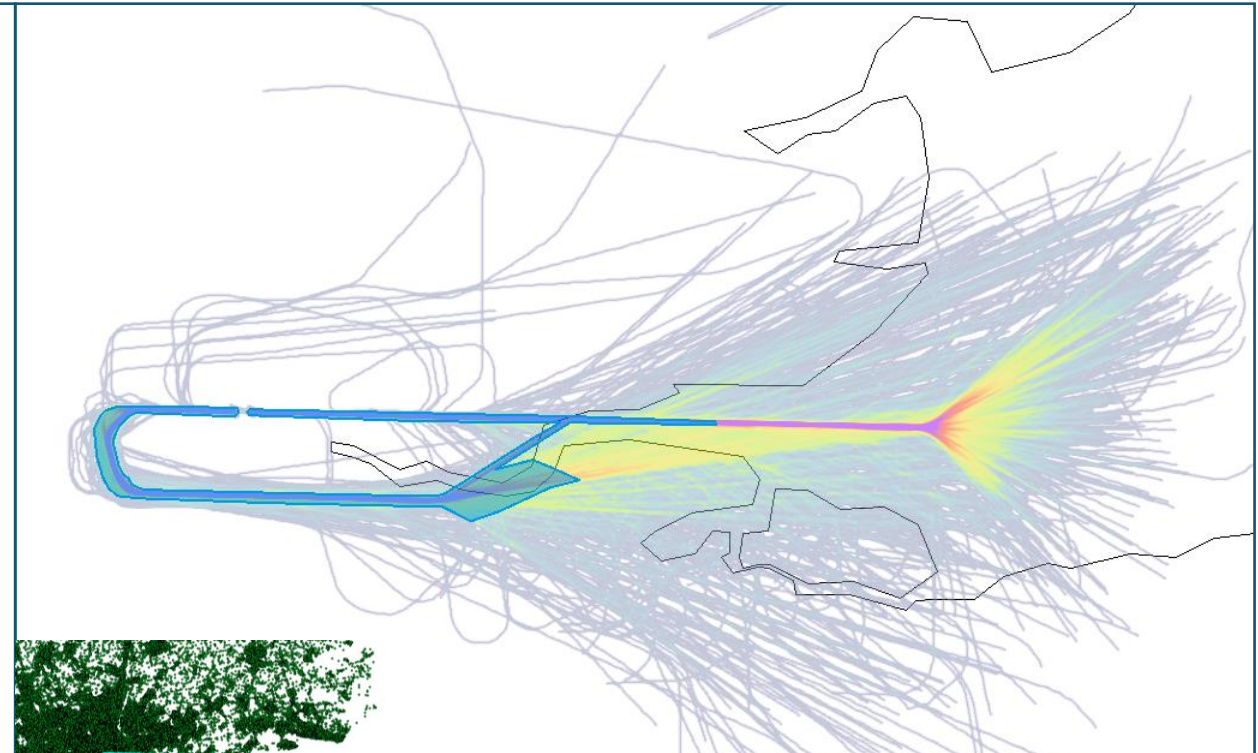
Arrivals Before



After



Population <4,000ft: 880,993



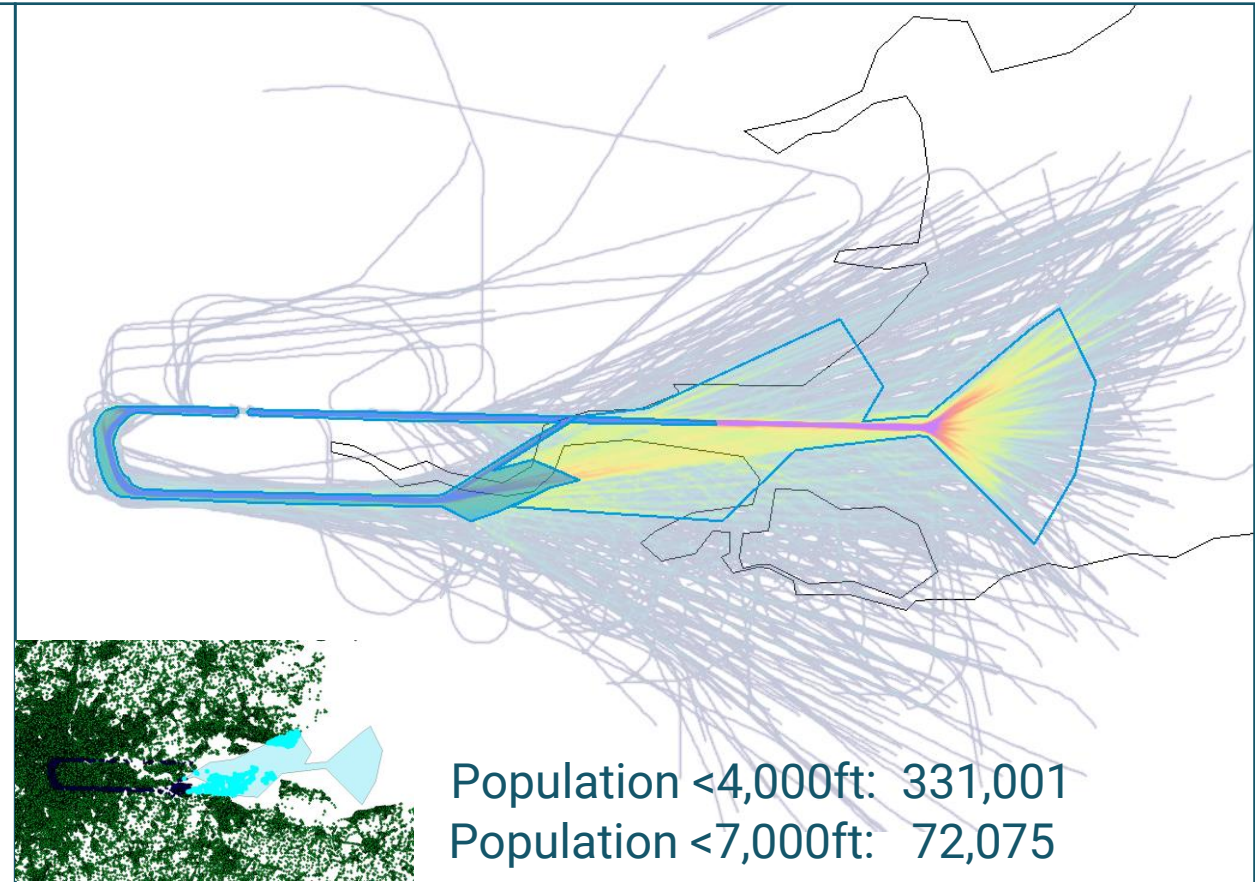
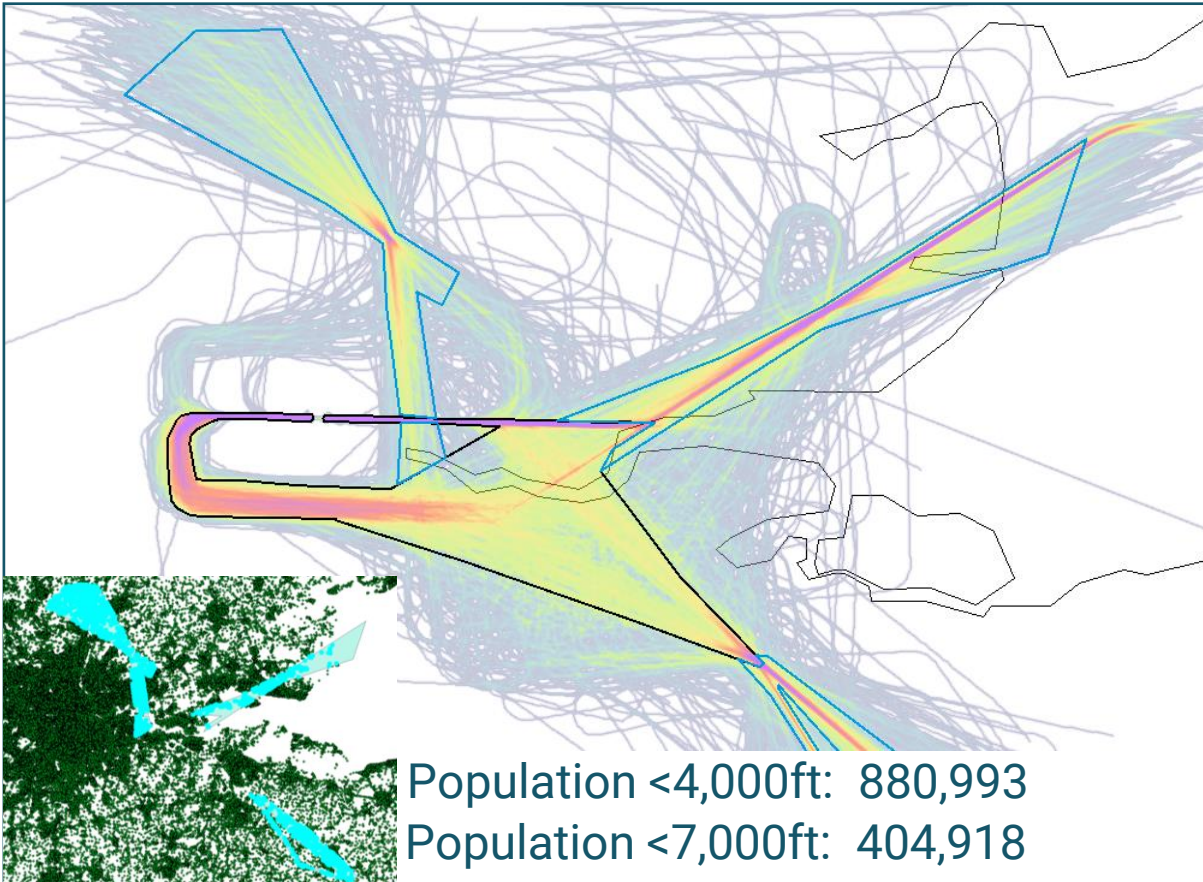
Population <4,000ft: 331,001

Outline of core areas overflown < 4,000ft

549,992 fewer people overflown (-62%)

Arrivals Before

After

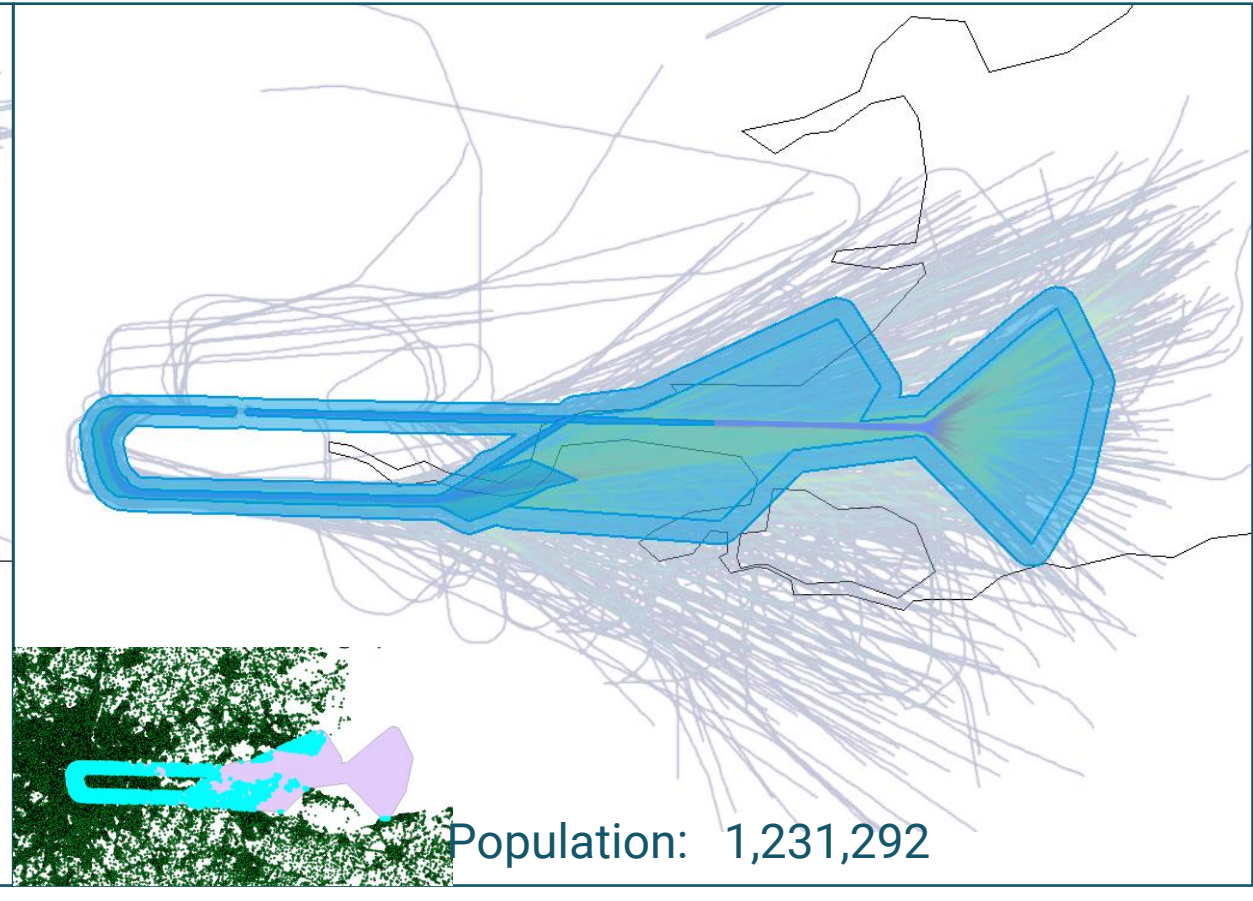
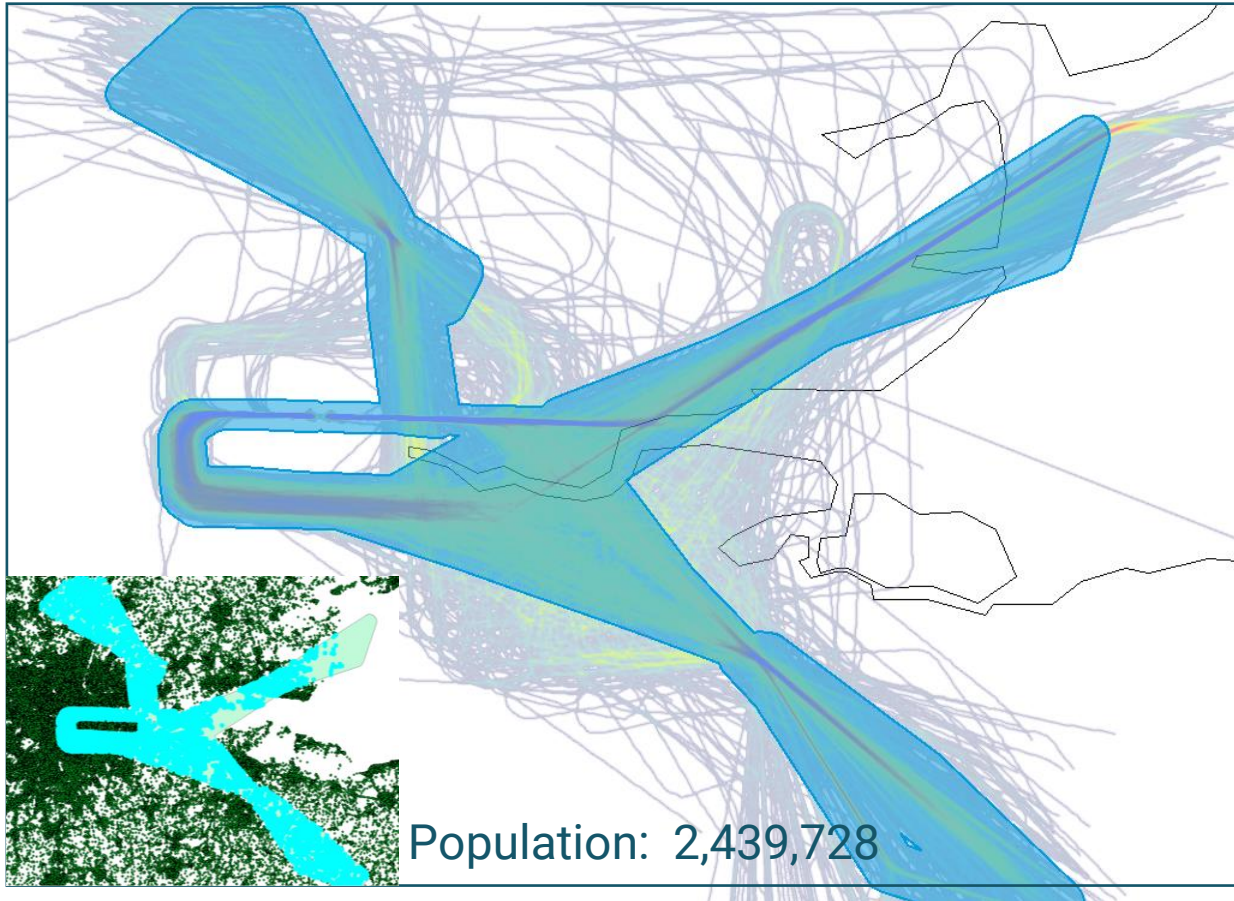


Outline of core areas overflown < 4,000ft and < 7,000ft **882,835 fewer people overflown (-69%)**

Arrivals Before



After

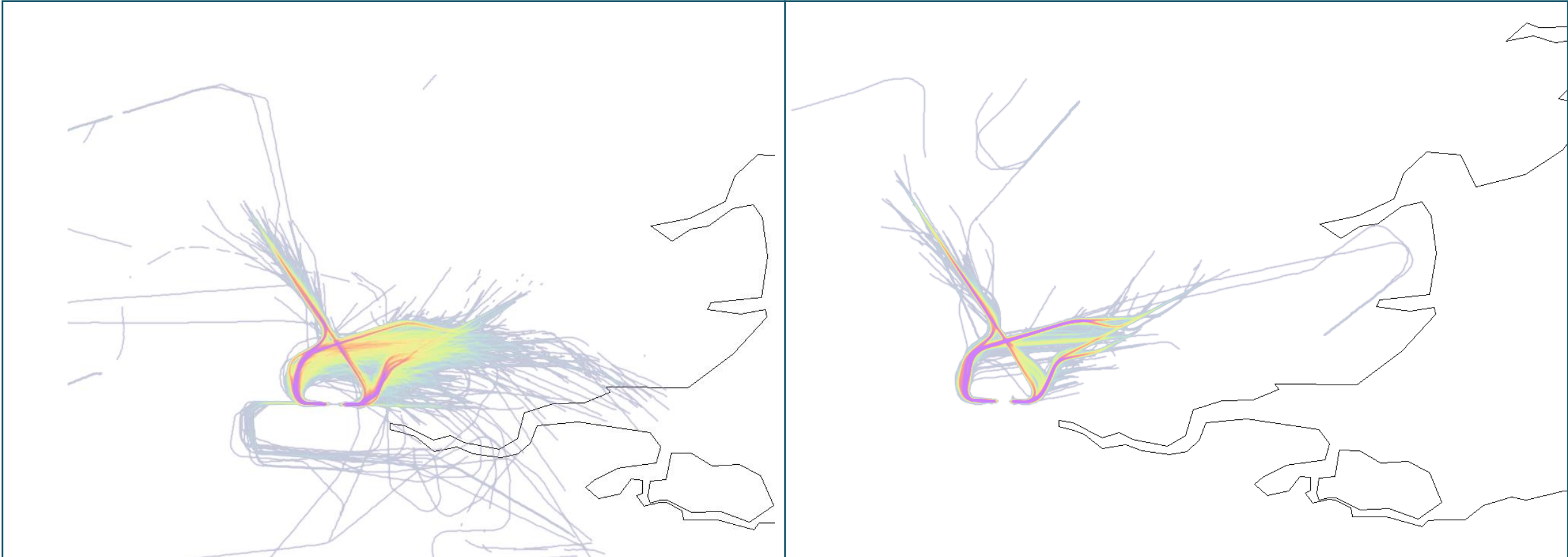


CAP1498 buffer areas overflown < 7,000ft **1,231,292 fewer people overflown (-50%)**

Departures
Before (Jun 2013)

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After (Aug 2016)

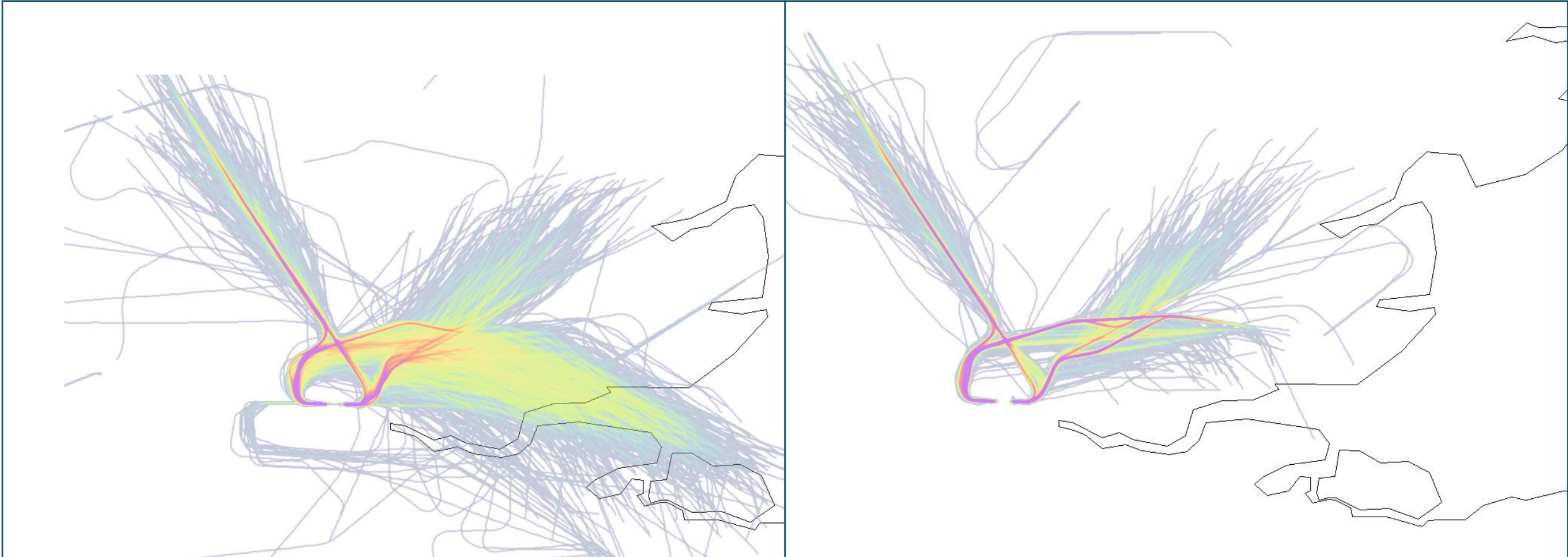


Trajectory Density < 4,000ft

Departures
Before

NATS

After

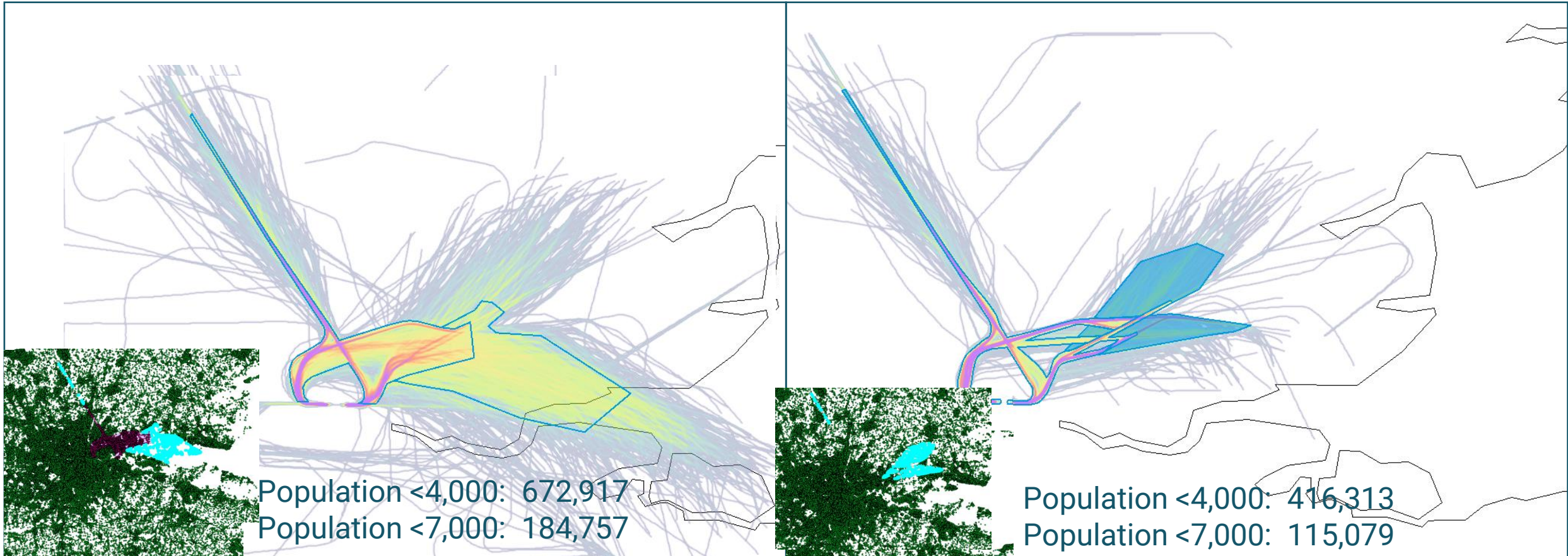


Trajectory Density < 7,000ft

Departures Before



After

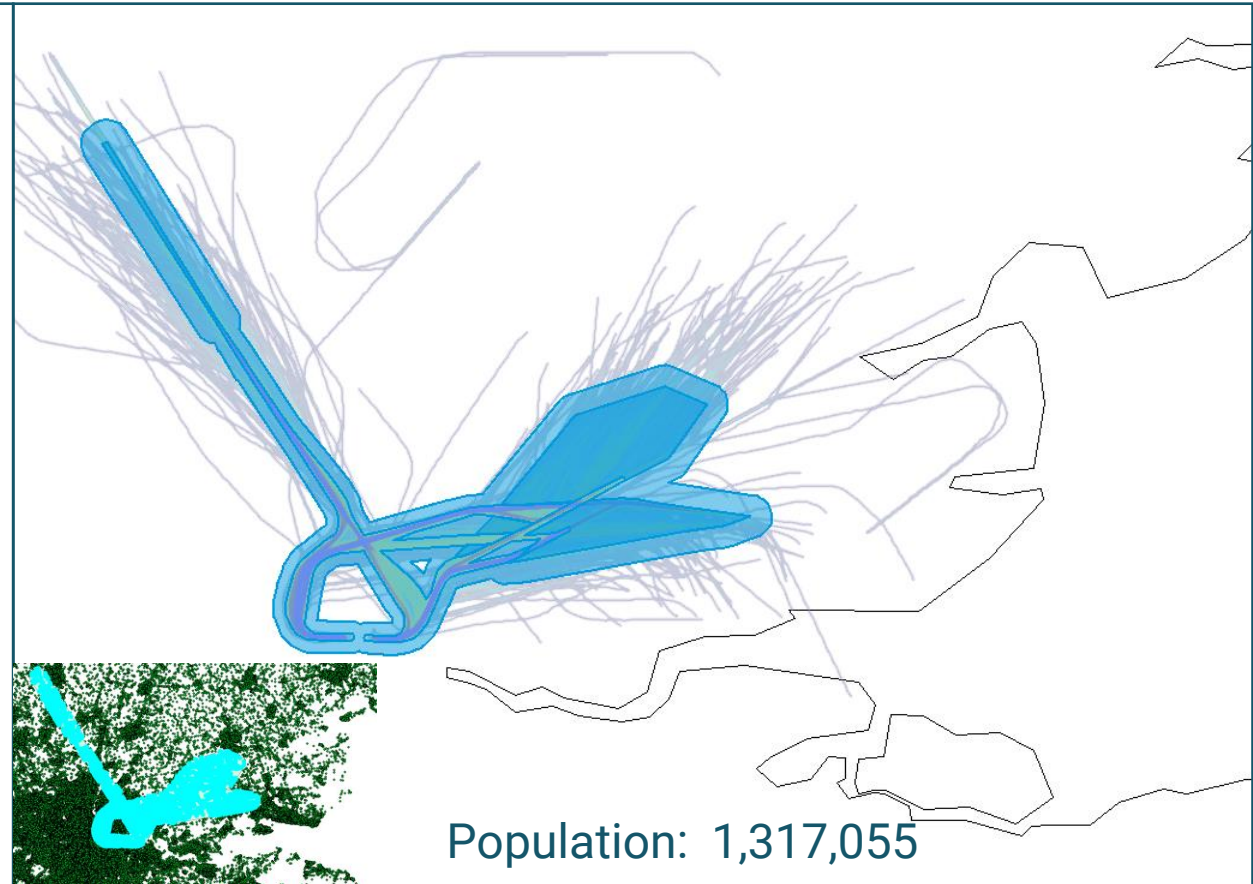
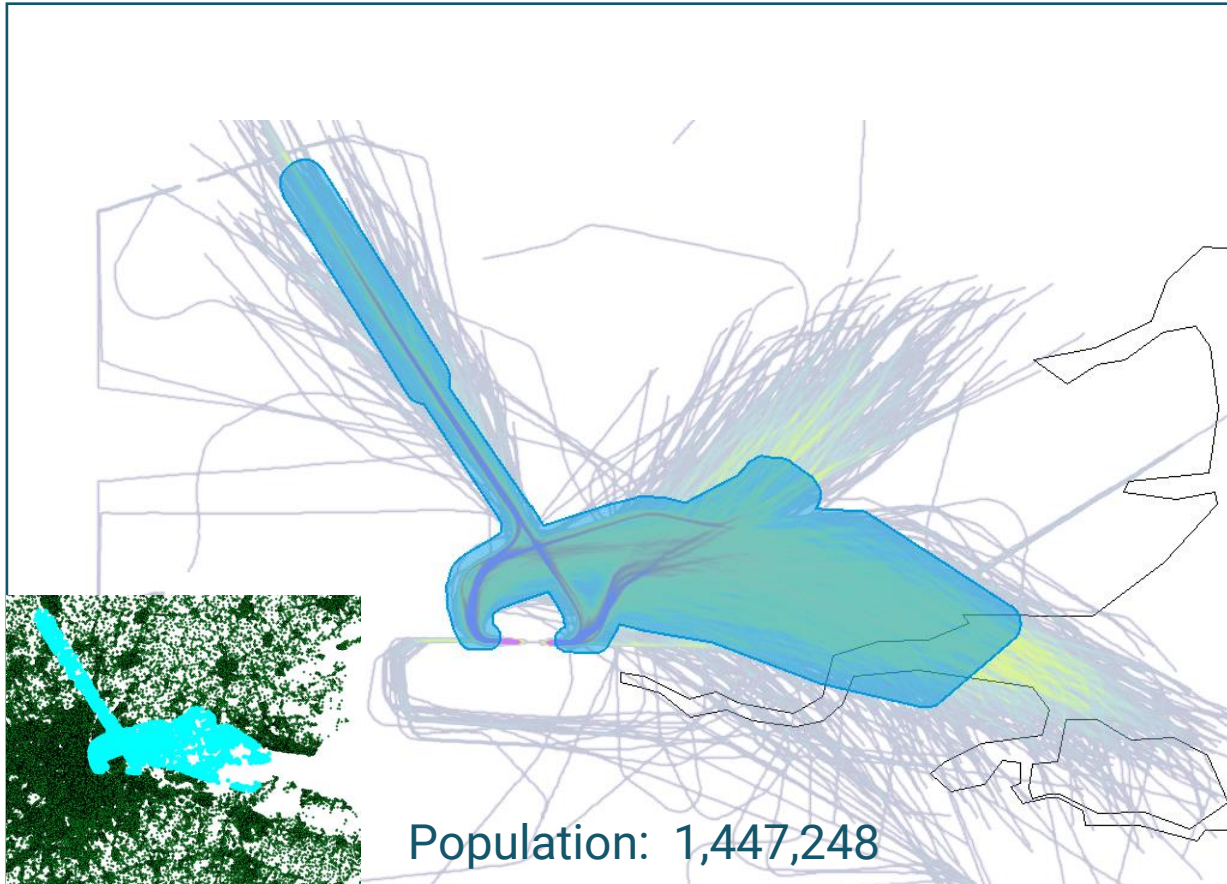


Outline of core areas overflown < 4,000ft and < 7,000ft **326,282 fewer people overflown (-38%)**

Departures Before



After



CAP1498 buffer areas overflown < 7,000ft

130,193 fewer people overflown (-9%)

Overview



Arrivals	Old	New	Delta	delta %
<4,000	880,993	331,001	- 549,992	-62%
<7,000	404,918	72,075	- 332,843	-82%
both	1,285,911	403,076	- 882,835	-69%
CAP1498	2,439,728	1,231,292	-1,208,436	-50%
Departures	Old	New	Delta	delta %
<4,000	672917	416313	- 256,604	-38%
<7,000	184757	115079	- 69,678	-38%
both	857,674	531,392	- 326,282	-38%
CAP1498	1,447,248	1,317,055	- 130,193	-9%

End

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