London City Airspace Modernisation

Stakeholder Engagement:
EXAMPLE TYPICAL PRESENTATION

Please read and respond to this request for feedback

Includes maps illustrating **new potential flightpaths in your area**

Purpose of this Pack

London City Airport, along with 20 other airports, is making changes to its flightpaths over the coming years.

We have invited you to an engagement session, we hope you can attend.

This pack is designed to be supplied after the engagement meeting in order for you to review the presented material in slower time, and to allow you to provide feedback after the session.

It can also be used as a standalone pack if you are unable to attend, however we encourage you to arrange a meeting if possible, where you can ask questions directly to the experts and gain greater context.

Please commit to providing feedback by mid January 2022.

Contents

- UK Airspace Modernisation Programme
- LCY Airspace Change Process progress so far
- Recap on Stage 1
- Stage 2 overview, deliverables and timescales
- Items to be presented to support proposed design concepts:
  - Interactions with other airports
  - Most frequent destinations and directions
  - Tips on how to read and provide comments on proposed design concepts
  - Reference tables – aircraft types, numbers, noise information
- **Airspace design concepts: description of the proposed systems**
- Recap and input required from stakeholders
- Next steps

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UK Airspace Modernisation Programme

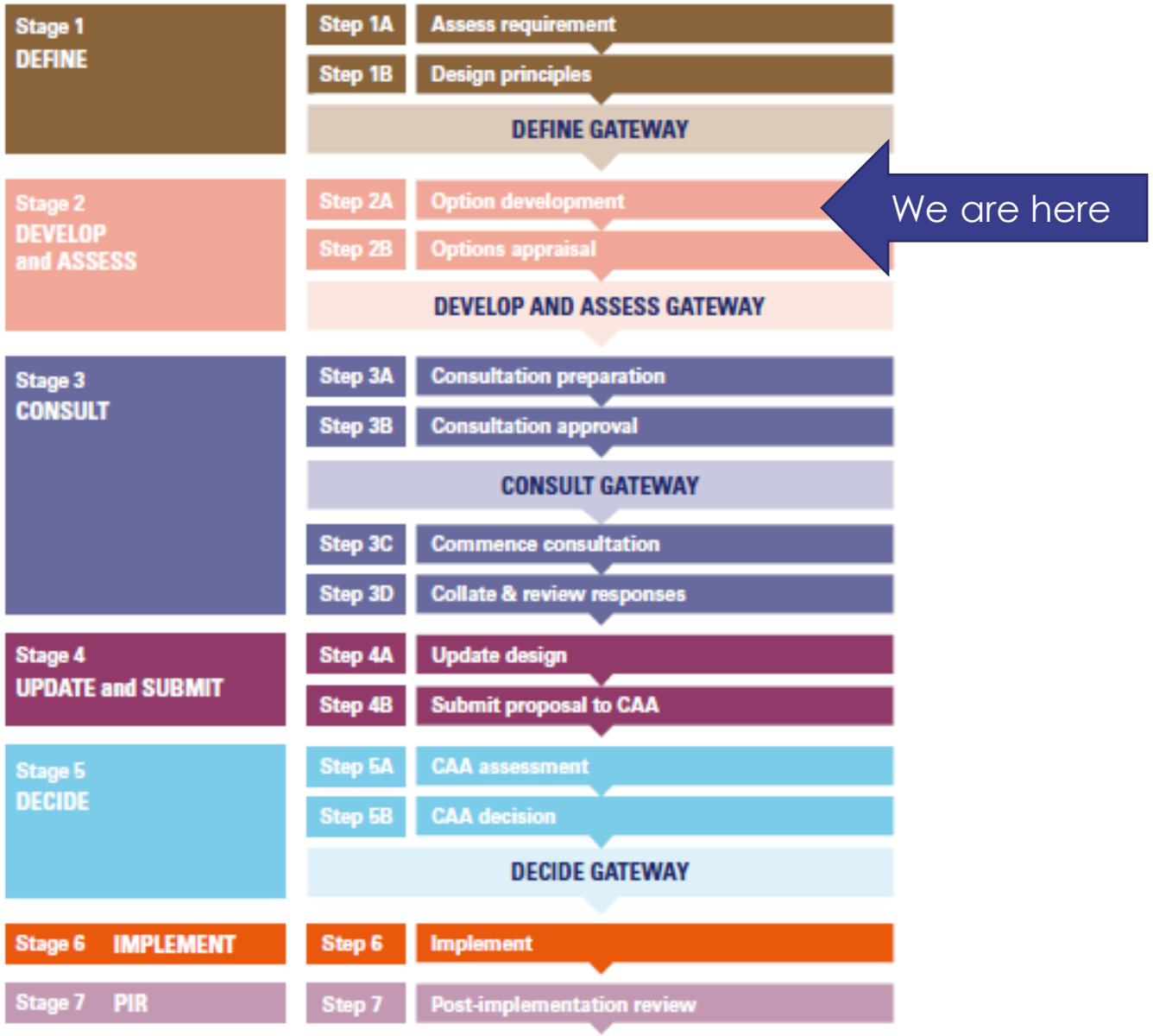
The UK Government's Airspace Modernisation programme aims to create an aviation infrastructure for the future to deliver quicker, quieter and cleaner journeys and more capacity for those using and affected by UK airspace.

The Department for Transport (DfT) and the Civil Aviation Authority (CAA) are working together to act as co-sponsors for the modernisation of the UK's airspace.

There are 21 airports identified across the UK who are involved in the Airspace Modernisation Programme alongside NATS, who are mandated to follow the CAA's Civil Aviation Publication (CAP) 1616 process.

Airports are responsible for modernising their route network up to 7,000ft and NATS for everything above 7,000ft.

CAP1616: Process Overview



- CAP1616: Airspace Design prescribes a seven stage approach to ACP.
- During each stage, documentation is required for submission and gateway review by the CAA.
- Gateway sign-off provides approval that relevant requirements were met and allows sponsors to move to the next stage in the process
- To ensure transparency, relevant information on proposals are made public through the CAA online portal (link to LCY's portal page).
- Stakeholder engagement is to be carried out throughout the process; main consultation is during Stage 3

LCY Airspace Change Programme - Progress to date

LCY started Stage 1 of the Airspace Change Programme (ACP) in Jan 2019.

All stakeholders with the potential to be impacted by the LCY programme were contacted for feedback on the design principles which was considered and incorporated as appropriate.

Stage 1 was completed in October 2019 when the 8 Design Principles were approved by the CAA and published. They outlined the LCY priorities that would be used when developing design concepts.

LCY then began work on ACP Stage 2 however this was paused at the start of the pandemic.

In Q2 2021, funds were released by the Government for all airports to recommence their ACPs.

In Q3 2021 LCY resumed Stage 2 supported by NATS specialist technical consultants.

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Stage 1: Approved Design Principles

Design principles form a quality framework against which airspace change design will be developed and evaluated in future stages.

Draft design principles were circulated to a wide variety of stakeholders for feedback during Q3 2019. Eight design principles were approved by CAA for Stage 1 in Oct 2019.

LCY approved design principles encompass safety, regulatory, environmental, operational objectives.

Reference Number	Tier 1 Design Principles	Priority Rating
DP0	**Must maintain (and ideally enhance) current safety standards**	A
DP1	**Must be in compliance with all laws and regulations**	A
DP2	**Must enhance navigation standards by utilising modern navigation technology**	A
DP3	**Must be consistent with the CAA's Airspace Modernisation Strategy (CAP1711) and any current or future plans associated with it, including the provision of sufficient airspace capacity**	A

Reference Number	Tier 2 Design Principles		Priority Rating
DP4	**Should limit and where possible reduce aircraft noise**		A
	Group (i)	Use noise efficient operational practices	
		Provide predictable respite routes	
		Avoid overflying communities with multiple routes, including from other airports	
	Group (ii)	Minimise the number of people newly overflown	
		Provide managed dispersal	
		Minimise the total population overflown	
		Avoid overflying noise sensitive areas e.g. schools, hospitals, care homes	
DP5	**Should minimise the amount of fuel used and the CO_2 subsequently emitted**		B
DP6	**Should minimise air pollution in the local area from aircraft**		B
DP7	**Should improve resilience during abnormal operating conditions**		B
DP8	**Should promote optimal network performance in collaboration with other airspace users**		C

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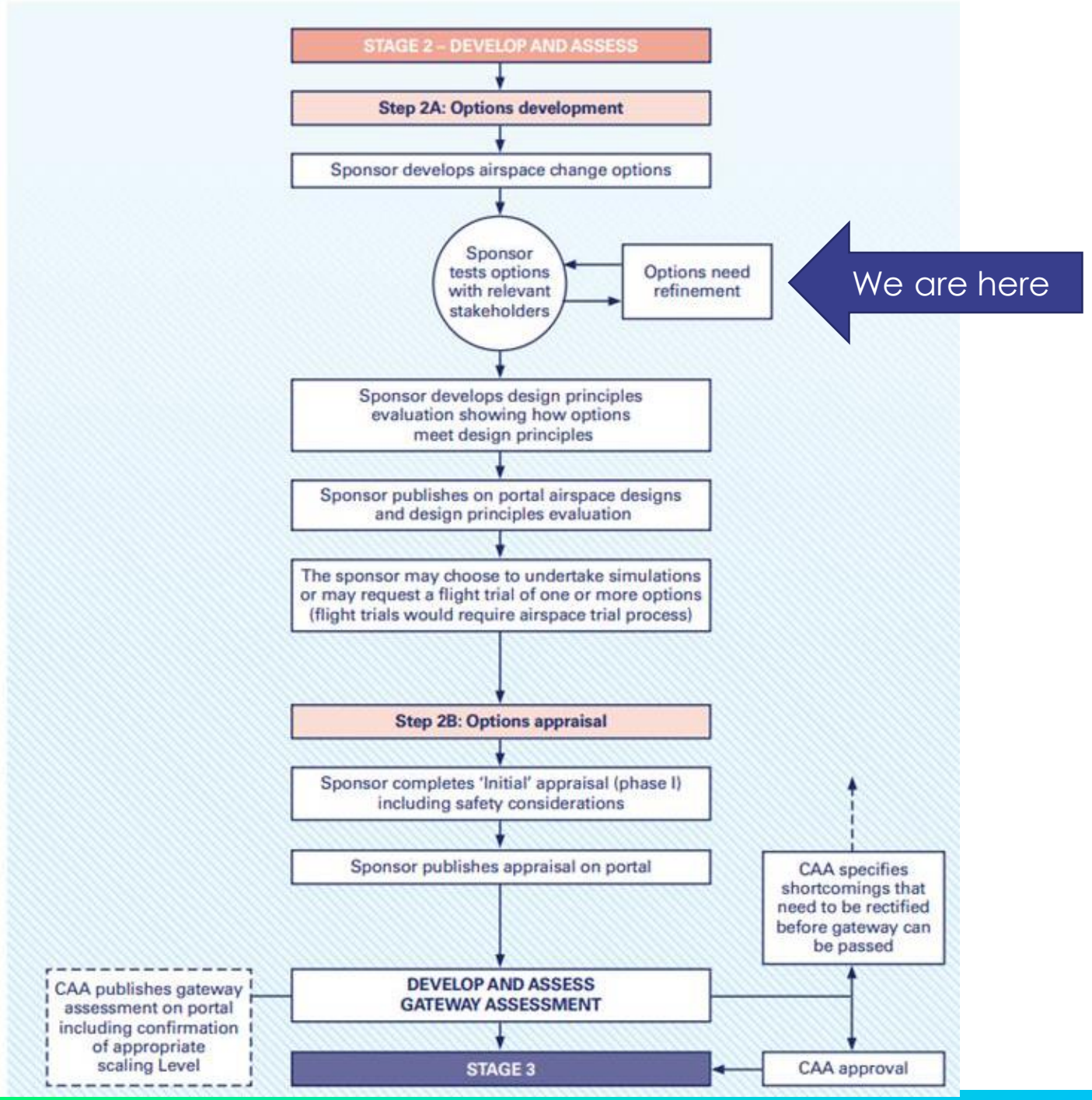
ACP Stage 2 Process

We have been developing a list of options in line with the design principles and currently testing options with technical and non technical stakeholders as per Stage 1.

Options will then be reviewed on the basis of the feedback received and assessed for their high level environmental, safety and operational impacts.



Stage 2 Deliverables and Timelines

Deliverable	Status	Planned Activity Duration	Stakeholder Input
Develop a comprehensive list of options that addressed the statement of need and design principles.	Completed		
Develop stakeholder engagement plan and presentation pack for stakeholders.	Completed		
Hold engagement session with all stage 1 stakeholders, issue engagement material and obtain feedback	**Ongoing**	**Nov – Dec 2021 Feedback please by mid Jan 2022**	**Stakeholders to provide feedback on shortlisted options by 17th Jan.**
Continue design development from the feedback and present outcomes to stakeholders	Not started	Jan 2022 – Mar 2022	NATS technical experts. LCY, stakeholders
Evaluate against design principles (design or components may be rejected or modified)	Not started	Jan-Feb 2022	LCY, NATS technical experts
Draft initial option appraisal	Not started	Feb-Mar 2022	NATS technical experts
Submission to the CAA	Not started	Q2 2022	LCY, NATS, CAA
Stage 3, incl. full formal consultation		TBC	LCY, NATS, Stakeholders

Proposed Design Options

The following slides will outline the proposed design options including:

- Traffic interaction summary with other airports
- Reference data to read the concepts (flows, directions, destinations, aircraft types, noise and CO_2 information)
- Current airspace showing the current typical flows and altitudes, and the main concentrations
- Shortlisted airspace designs for each runway which are combined into systems and present flows, altitude bands illustrated as developed to keep aircraft higher for longer, or climbed earlier, in order to reduce noise impacts.

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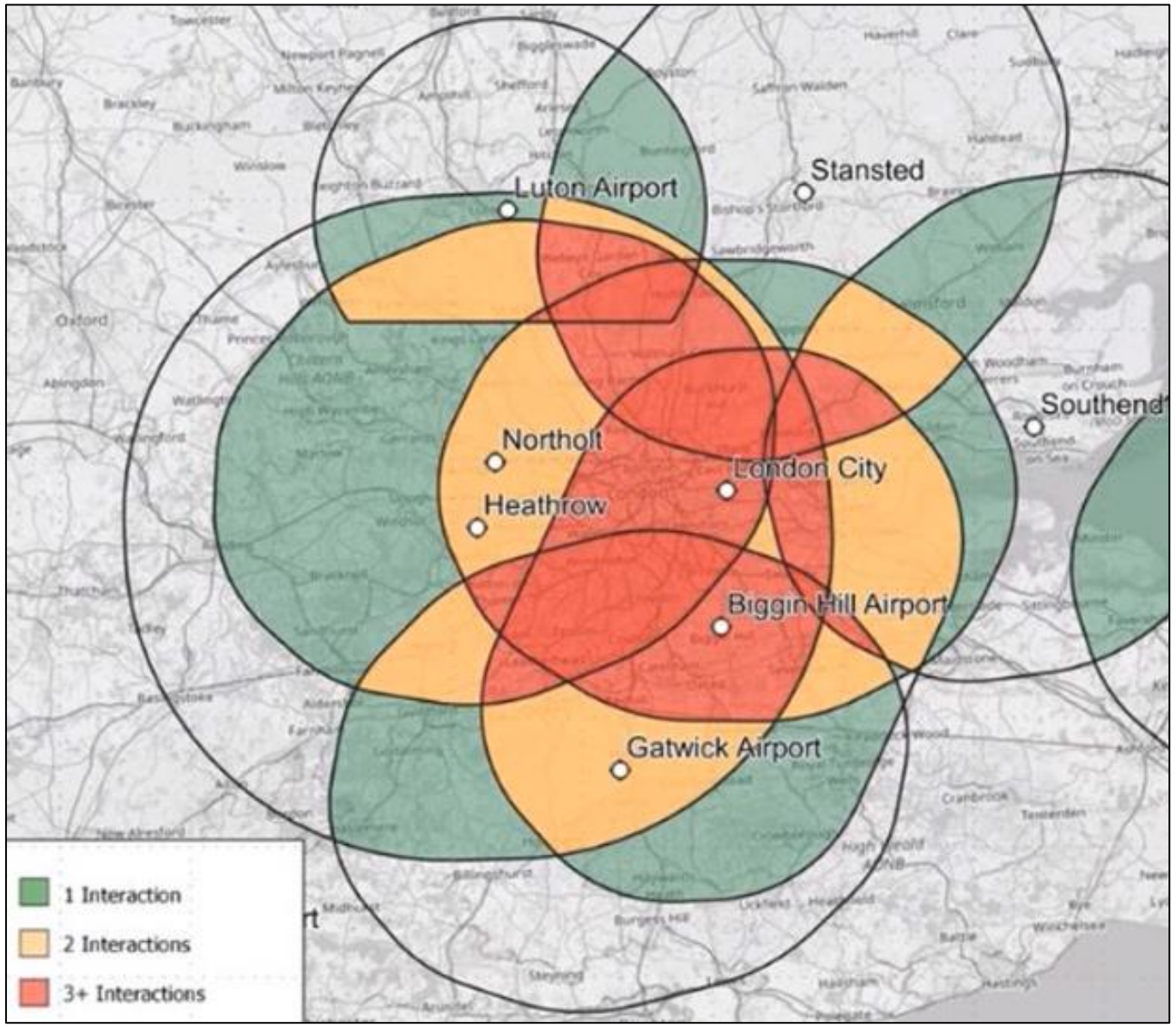
Concept Designs Review

When providing feedback, please ensure you consider the following points:

- Understand how flightpaths could change compared to the current situation
- Use the map key to understand flows and altitudes
- Use the reference tables to check how often overflight occurs, how high, how much noise you can perceive and how that might change
- Consider your feedback for each of the five proposed design concepts

Airport Interaction summary overview



LCY has complex inter-dependencies with neighboring airports as shown in the map.

- Every proposed change has the potential to impact other airports and must be discussed and negotiated with all interested parties as well as NATS.
- Bilateral meetings are being held between LCY and all neighboring airports

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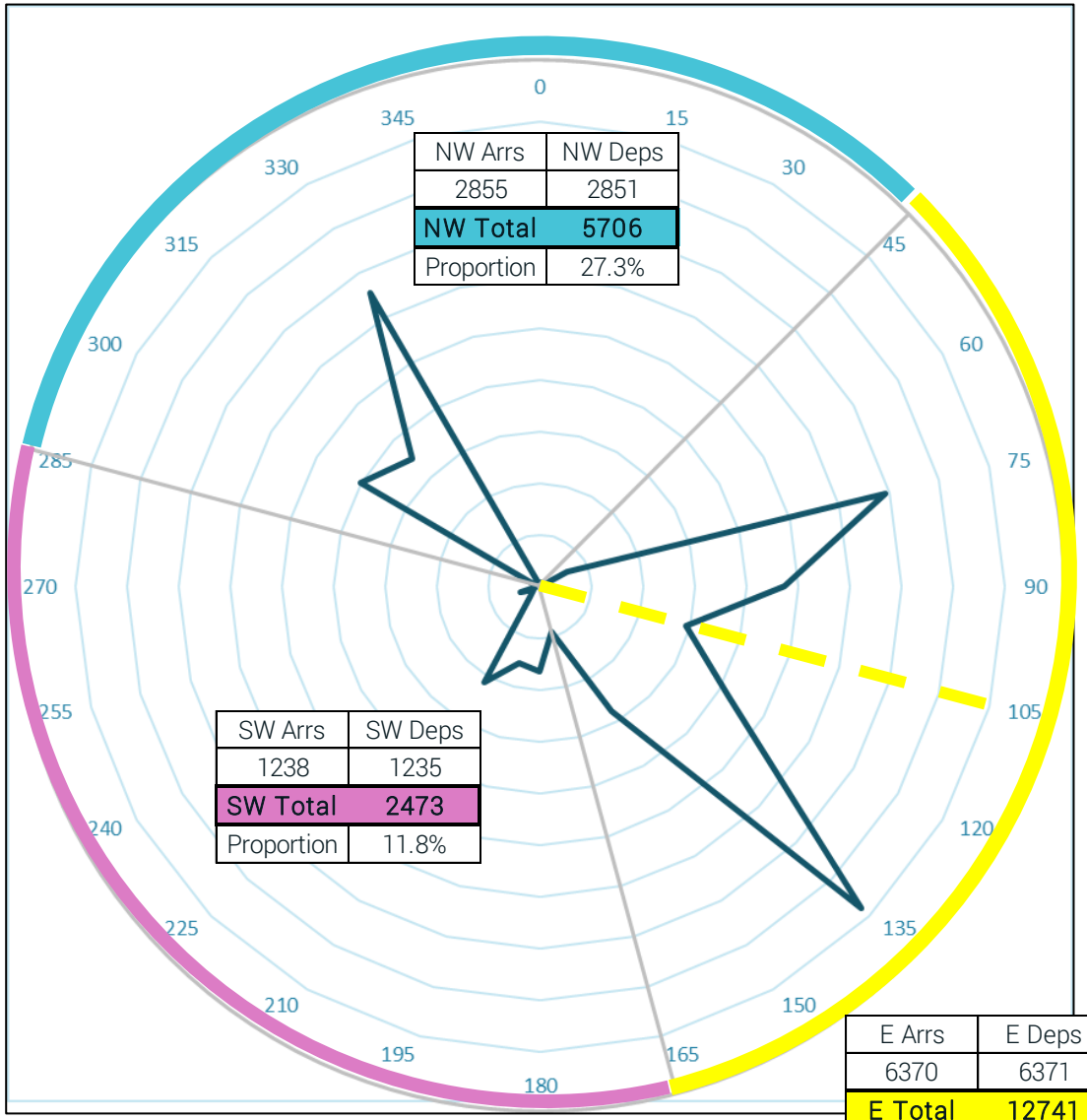
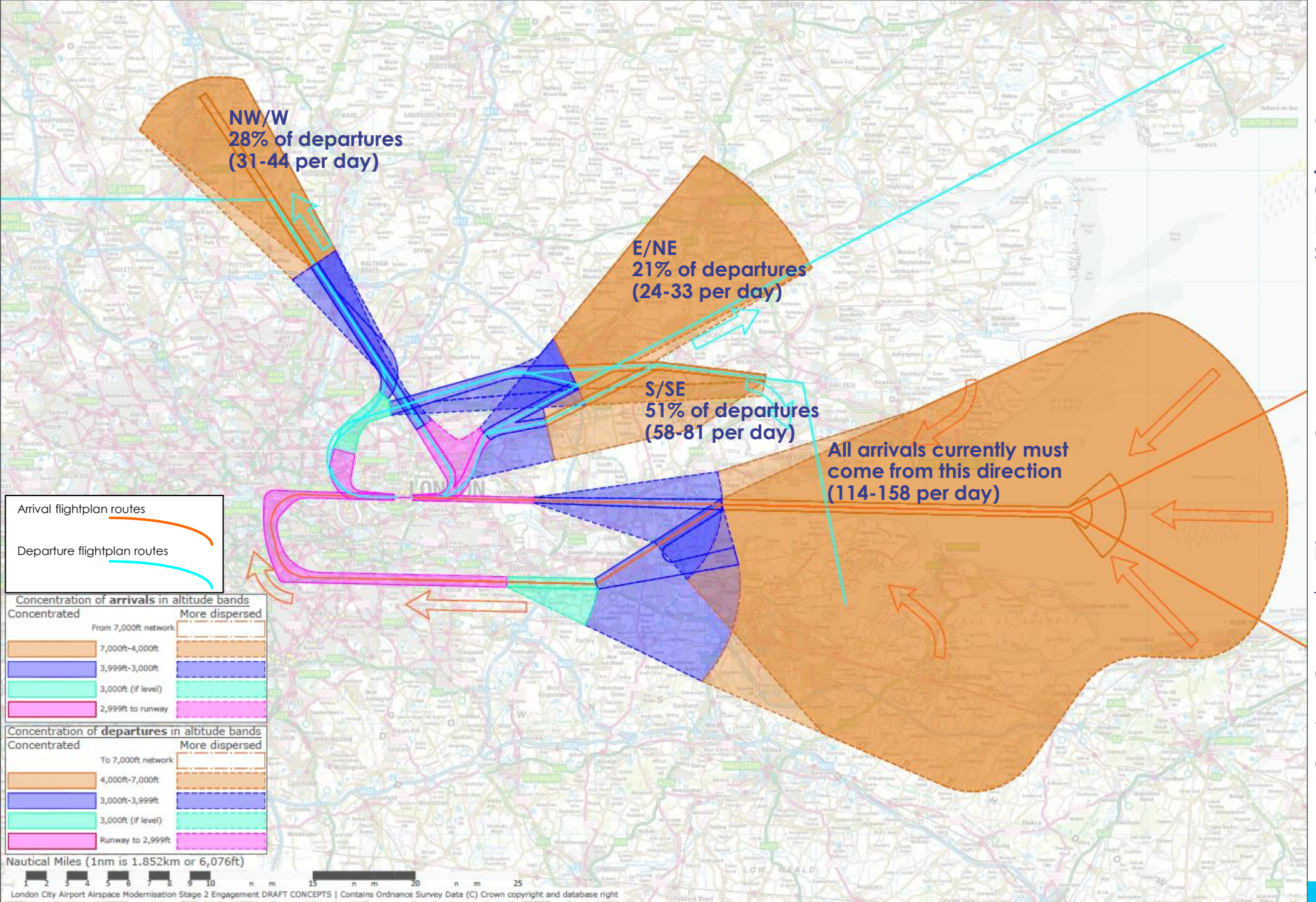
Destination directions overview



Straight line bearings between airports: Proportions per sector (Summer 2019)

2019 Destinations	Proportions with 3% or more (total 59.6%)
Amsterdam	9.8%
Edinburgh	8.4%
Dublin	7.7%
Zurich	6.6%
Frankfurt	4.4%
Belfast	4.2%
Luxembourg	4.1%
Düsseldorf	3.9%
Glasgow	3.9%
Milan	3.4%
Rotterdam	3.1%



General flow proportions

Current systems below 7,000ft

Overview of 2019 pre-pandemic traffic for summer period

16 Jun-15 Sep 2019

Daily Average

(total flights in the period divided by 92 days)

Daily Peak

(busiest individual day in the period)

Runway usage

Easterly runway 09
c.27% of flights

Westerly runway 27
c.73% of flights

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LCY Aircraft and Noise Reference Table

Overview of 2019 traffic for summer period (16 Jun-15 Sep 2019)

Generic type of aircraft	Average Deps or Arrs Per day (double this for total daily movements)	Busiest Deps or Arrs Per day (double this for total daily movements)
70-90 seat jet	83	114
50-70 seat turboprop	21	29
Jet with 50 seats or fewer	7	9
125-seat jet	3	5
Small Turboprop	1 or fewer	1 or fewer
Dep or Arr Total	128	158

Comparison of Noise Levels

Typical Sound	Approximate noise (LMax dBA)
Pneumatic drill, 7m away	95
Heavy diesel lorry at 25mph, 7m away	85
Vacuum cleaner, 3m away	70
Busy general office	60
Quiet office	50
Quiet bedroom, library	35
Threshold of audibility	0

Most common aircraft type	Fuel burn per nautical mile	CO_2 emissions per nm
Embraer E190	6.3kg at c.7000ft	20kg at c.7000ft

Arrivals Height (ft)	Turboprop	50 seat regional jet	70-90 seat regional jet	125-180 seat single-aisle 2-eng jet
	(Units are LMax dBA)			
1000-2000	79-70	73-63	77-67	77-69
2000-3000	70-66	63-56	67-61	69-64
3000-4000	66-64	56-55	61-57	64-61
4000-5000	64-62	Below 55	57-56	61-59
5000-6000	62-61	Below 55	56-55	59-57
6000-7000	61-59	Below 55	Below 55	57-56

Departures Height (ft)	Turboprop	50 seat regional jet	70-90 seat regional jet	125-180 seat single-aisle 2-eng jet
	(Units are LMax dBA)			
1000-2000	78-71	78-70	85-75	85-75
2000-3000	71-67	70-65	75-68	75-70
3000-4000	67-64	65-60	68-64	70-66
4000-5000	64-62	60-57	64-61	66-63
5000-6000	62-60	57-55	61-58	63-60
6000-7000	60-58	Below 55	58-56	60-59

CAA sourced noise tables stop at 55dBA – below this level, the accuracy of individual noise readings is difficult to maintain and is often masked by background noise

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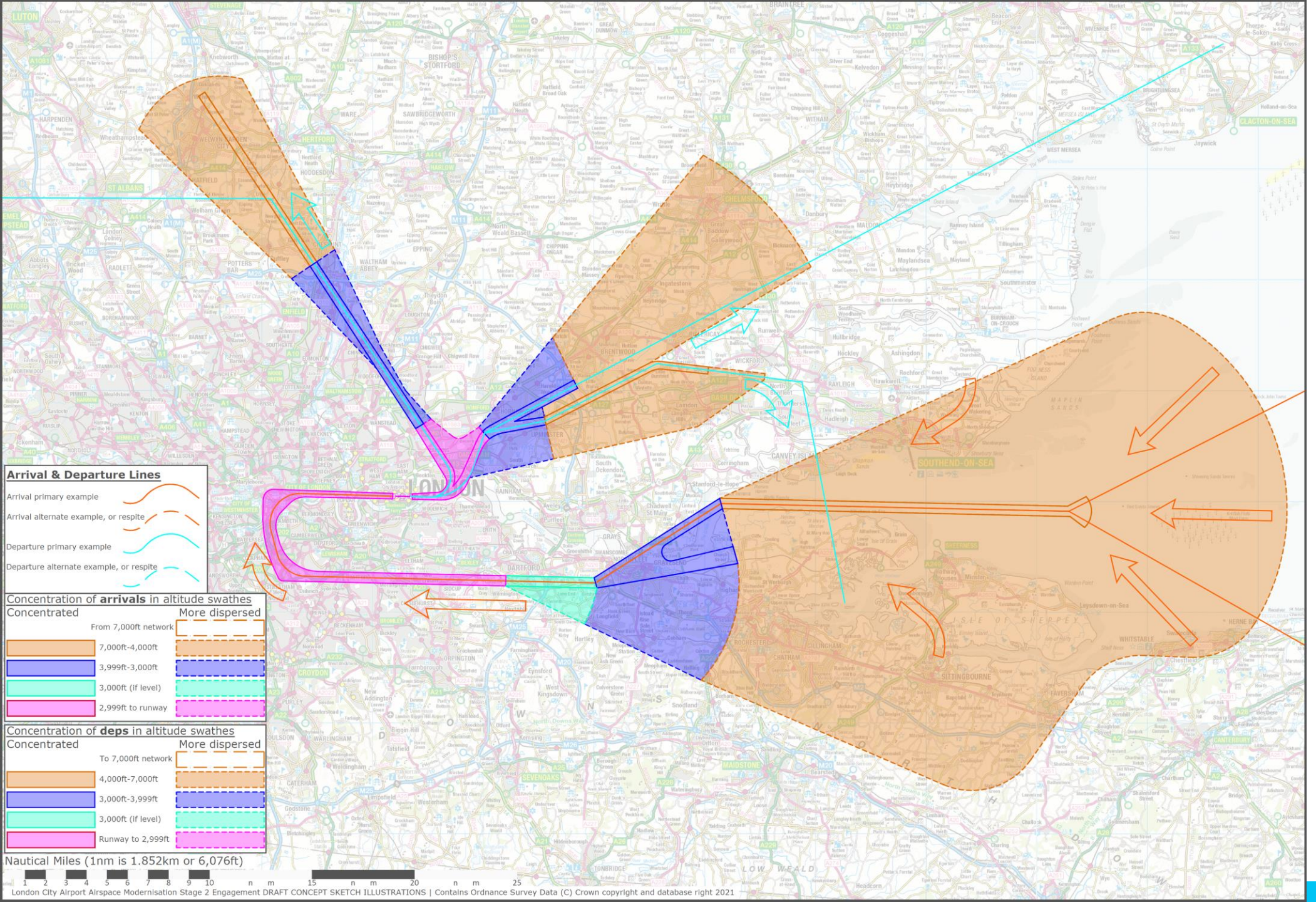
Airspace Design Systems: Runway 09 Easterly (in use c.30% of the time)

09 Current system
09 System 1
09 System 2
09 System 3

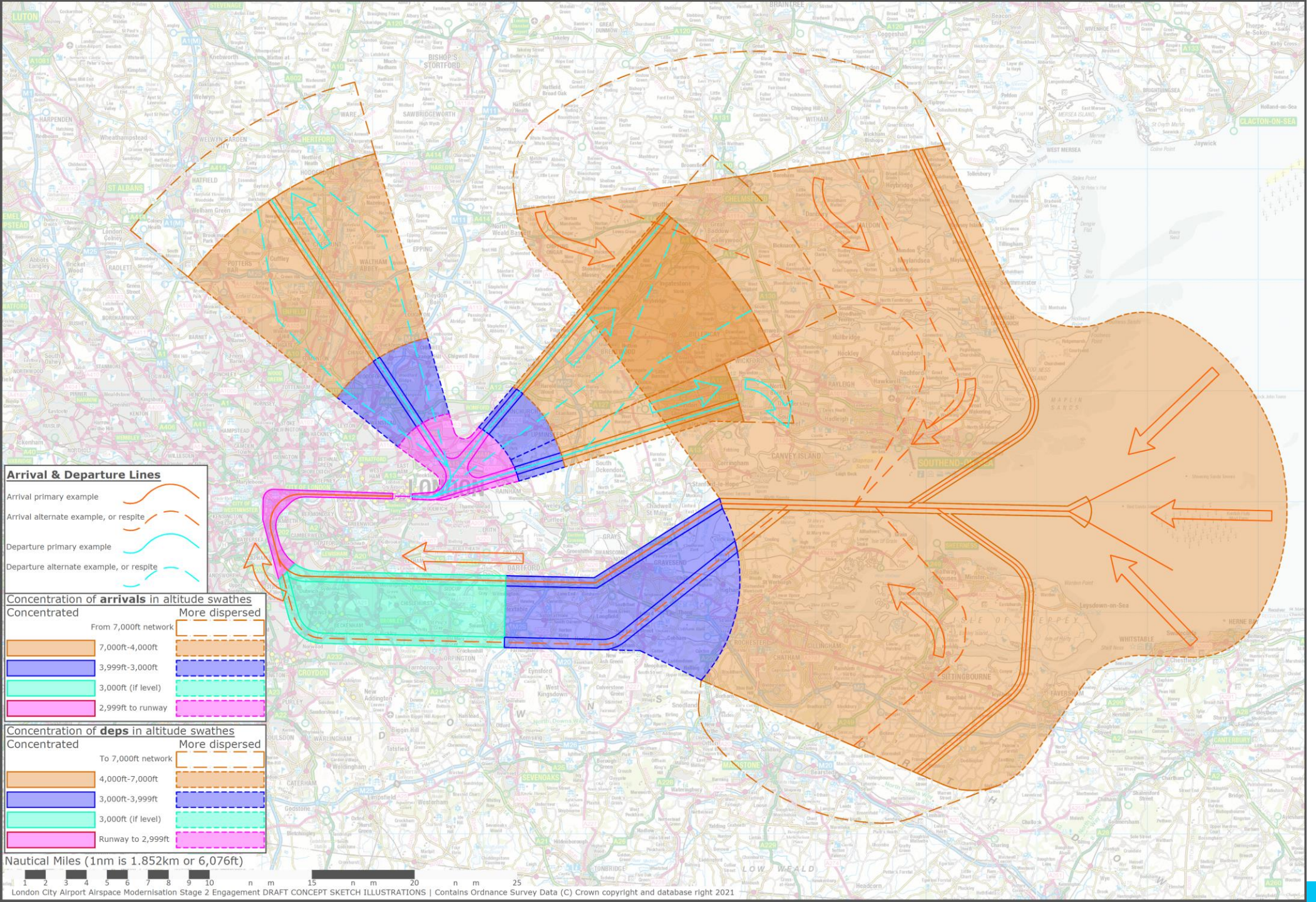
09 Current

Aircraft fly most along the tramlines, and regularly disperse within these swathes



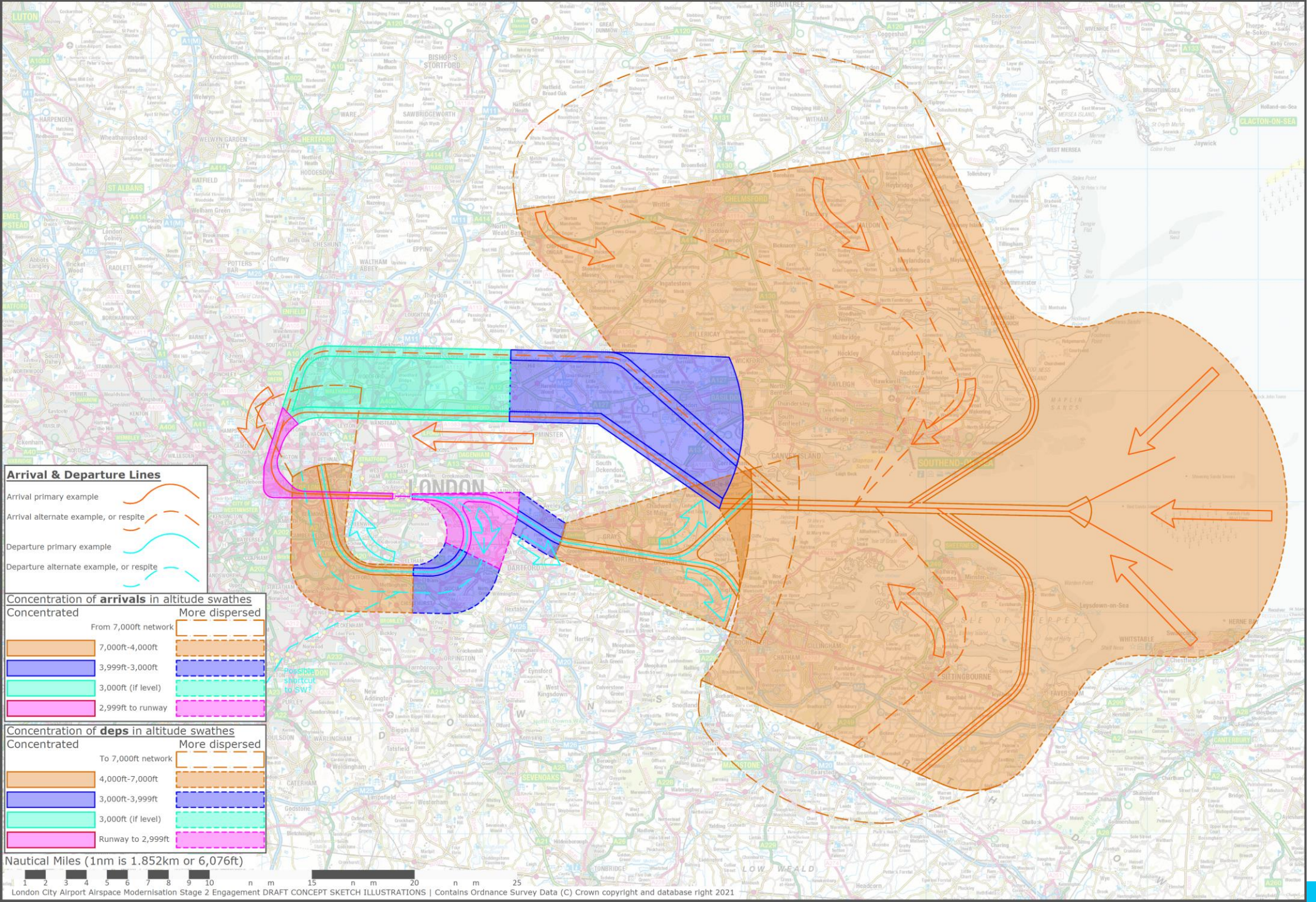
09 System 1

Specific routes would be defined within the swathes, some shortcutting dispersal may occur but would be less common than the current system



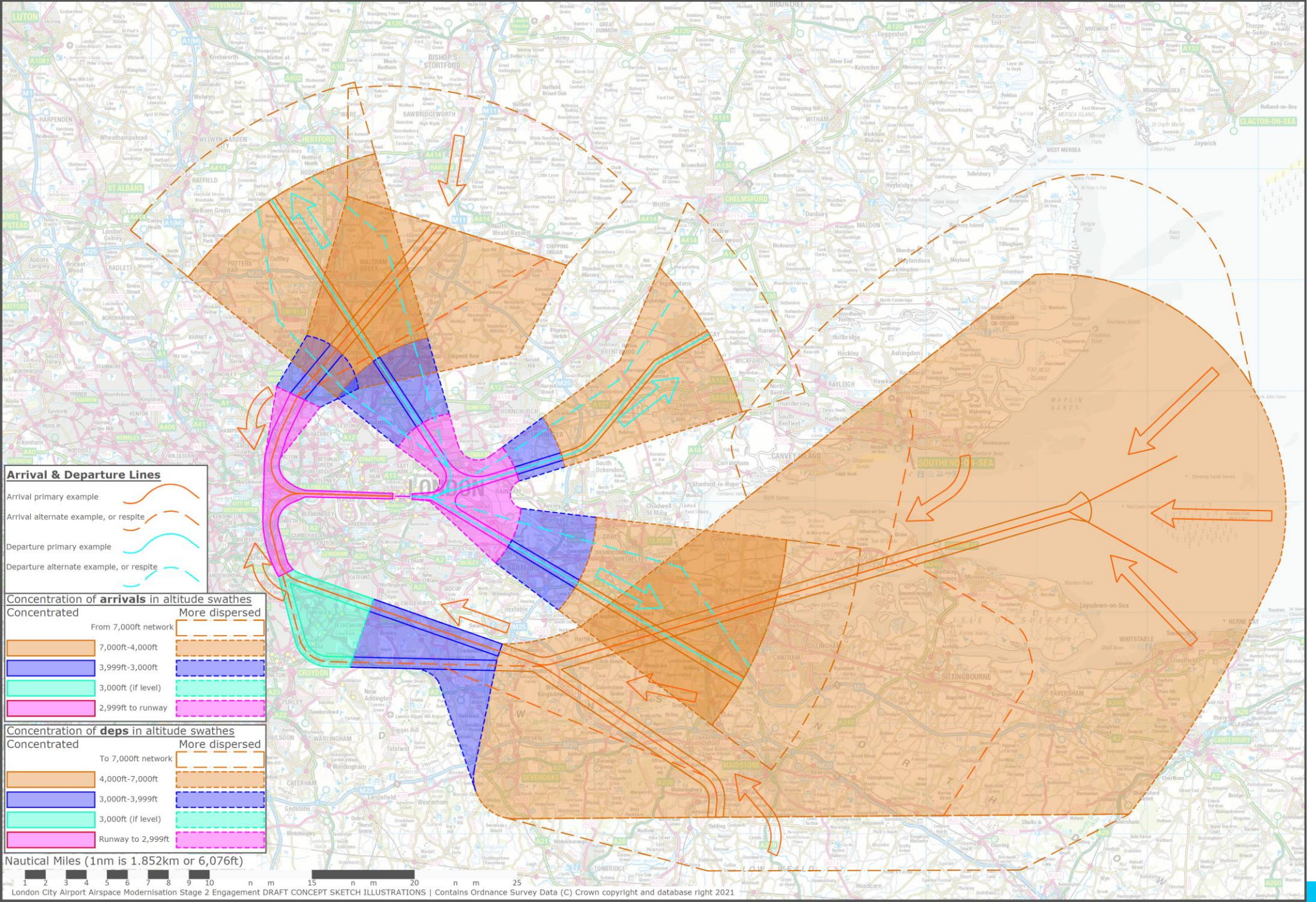
09 System 2

Specific routes would be defined within the swathes, some shortcutting dispersal may occur but would be less common than the current system



09 System 3

Specific routes would be defined within the swathes, some shortcutting dispersal may occur but would be less common than the current system

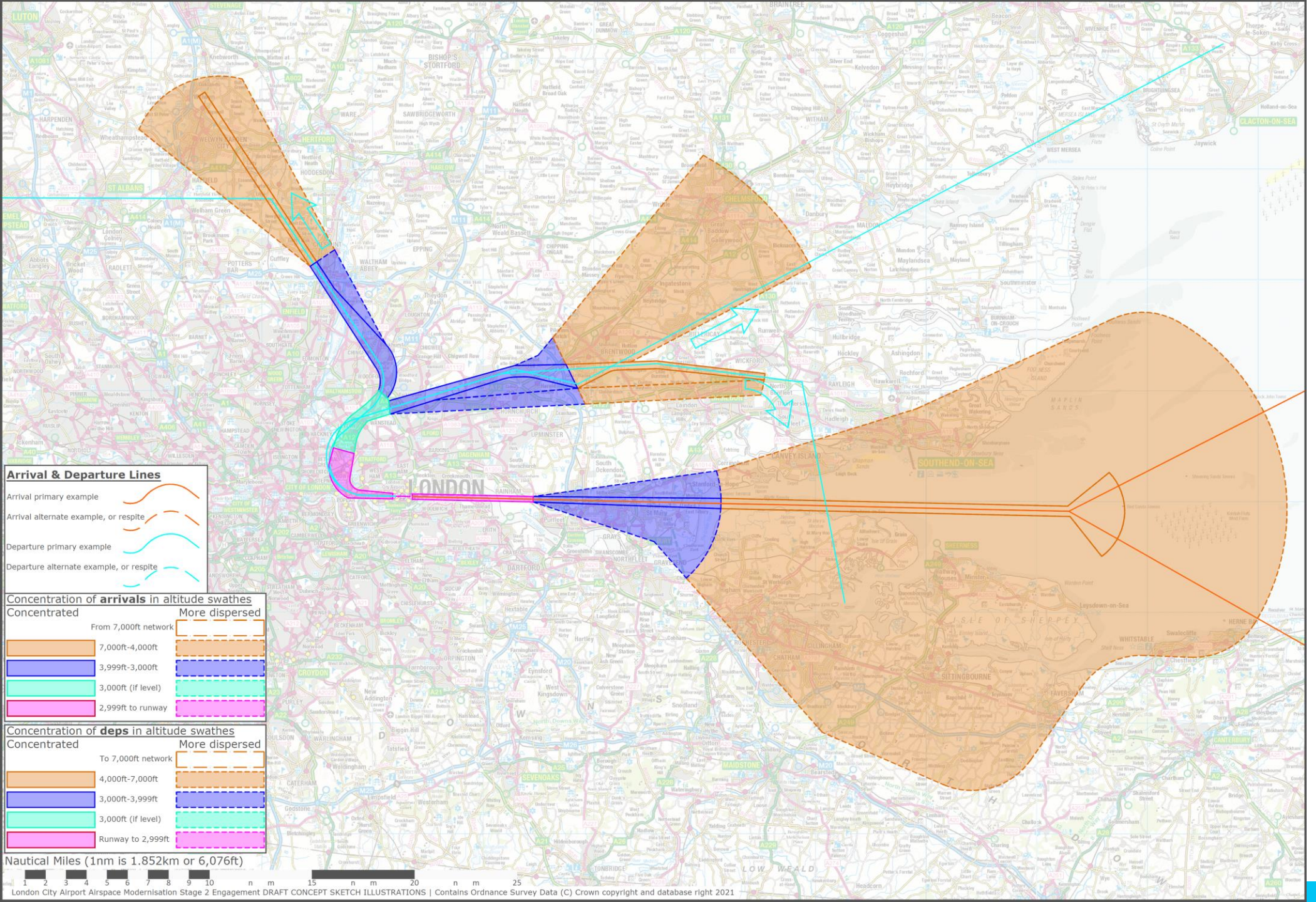


Airspace Design Systems: Runway Westerly (in use c.70% of the time)

27 Current system
27 System 4
27 System 5

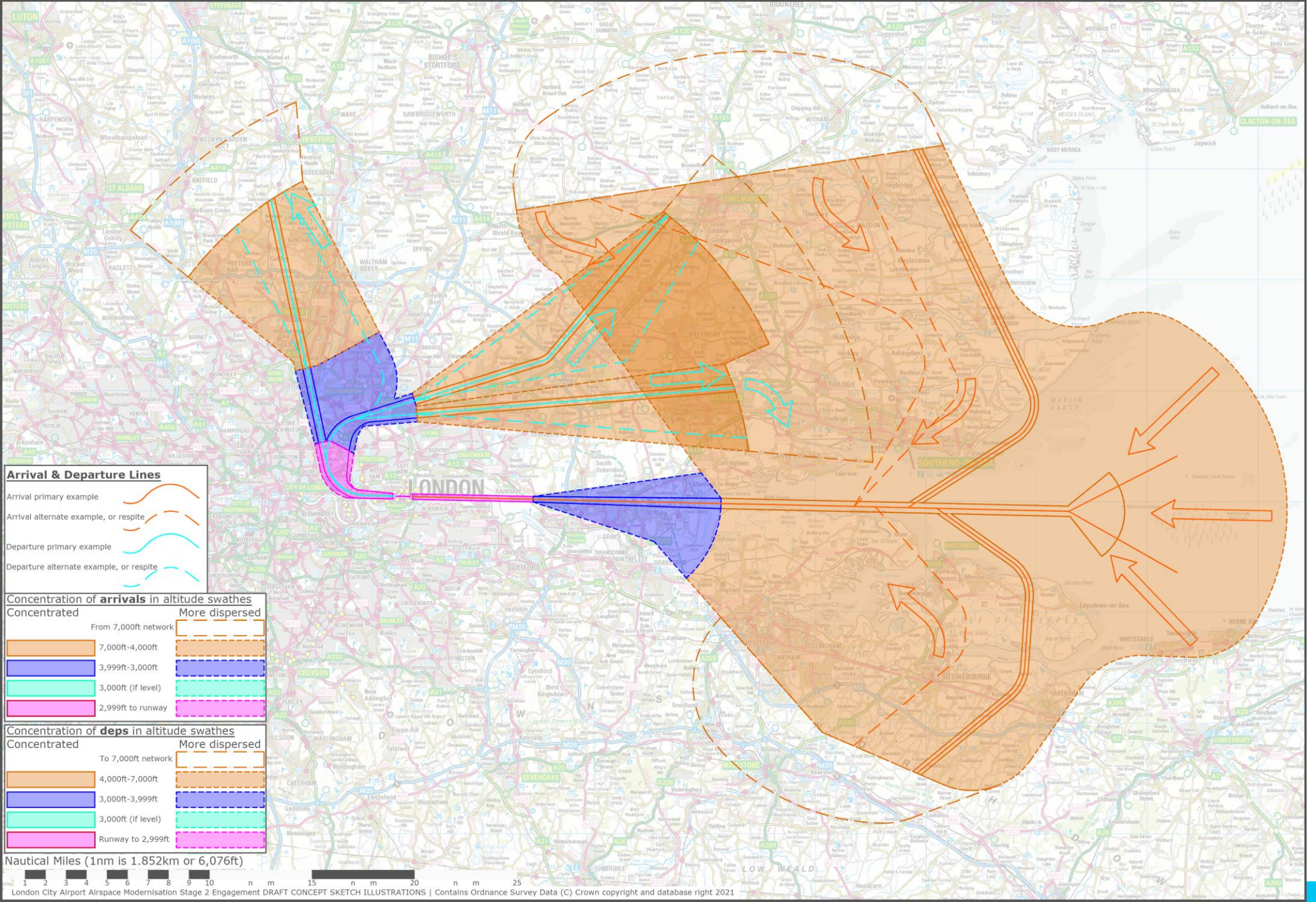
27 Current

Aircraft fly most along the tramlines, and regularly disperse within these swathes



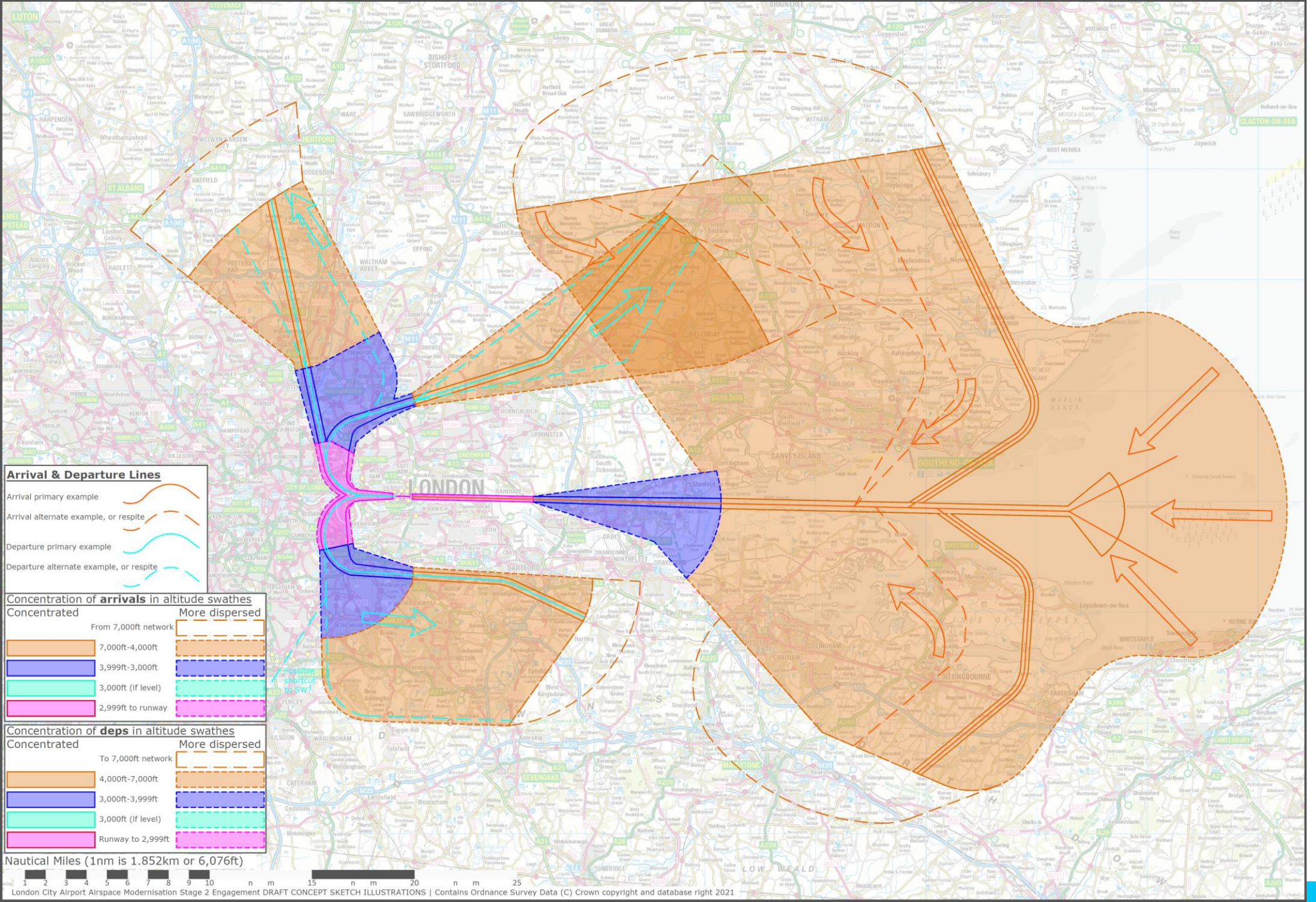
27 System 4

Specific routes would be defined within the swathes, some shortcutting dispersal may occur but would be less common than the current system



27 System 5

Specific routes would be defined within the swathes, some shortcutting dispersal may occur but would be less common than the current system



Please:

Take the time to read the material, study the maps, and watch the **video** commentary.

Remember that maps like this always look 'final' even though they are illustrative sketches of aspirational flightpath designs. Each potential system's design envelope lines and boundaries are not yet 'set', please do not 'zoom in' to a map boundary and make absolute assumptions of overflight, based on the precise position of a line.
The widths and shapes of the design envelopes may end up wider, or two envelopes with an intervening 'gap' may end up overlapping, or the indicated altitudes may become lower or higher or further or nearer, as development continues.
These maps remain our best estimate at this early point in the airspace change process, and we will use feedback from all representative stakeholder groups to update the design envelopes.

Remember that the PDF and videos are designed for stakeholder organisations to provide feedback. They are not 'confidential', however they are also not designed to be published elsewhere in isolation such as on social media because the highly conceptual nature of the Airspace Change Process Stage 2, and its evolution over the coming months, gives crucial context.

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Please provide feedback on the design options

Use the Design Principles to frame your feedback

The feedback template form will help

LCY ACP Stage 2 - Recap

- This **is initial engagement only**; the proposed design options are draft and will be subject to changes and/or amendments as we move on through the process.
- The proposed 'long-list' of airspace designs for each runway are:

  Three systems for Runway 09 Easterly (1-3)

  Two systems for Runway 27 Westerly (4-5)

  09 System 1 and 27 System 4 are closest to today's arrangements

  09 System 2, 09 System 3 and 27 System 5 take a different approach and have pros and cons to be evaluated
- **Please use the design principles as your framework and provide your comments on the proposed design concepts via the feedback form (see email link)**
- A video commentary will be made available (see email link)
- **Full consultation to follow later in the process** when you will obtain advanced information and be able to provide further comments and feedback on the shortlist of designs.

Next steps

- We will collect your feedback from this session, and any provided separately via online form by Mon 17th Jan 2022.

  (If you would benefit from another engagement session before this date, let us know and we will arrange it)

- Your feedback will be considered and addressed as appropriate to inform our design development and design appraisal documentation, as per the timeline slide earlier in this pack

Thank you!