London's Transport Future

Swiss Mobility Arena 2019

- London's Transport Future
  - Overview
  - Core principles
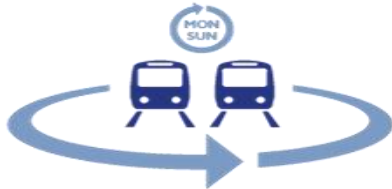 - New horizons

Overview: Population Growth

Today the population of London is **8.9m** and by 2030 it will grow to around **10m**. That's a rate of...
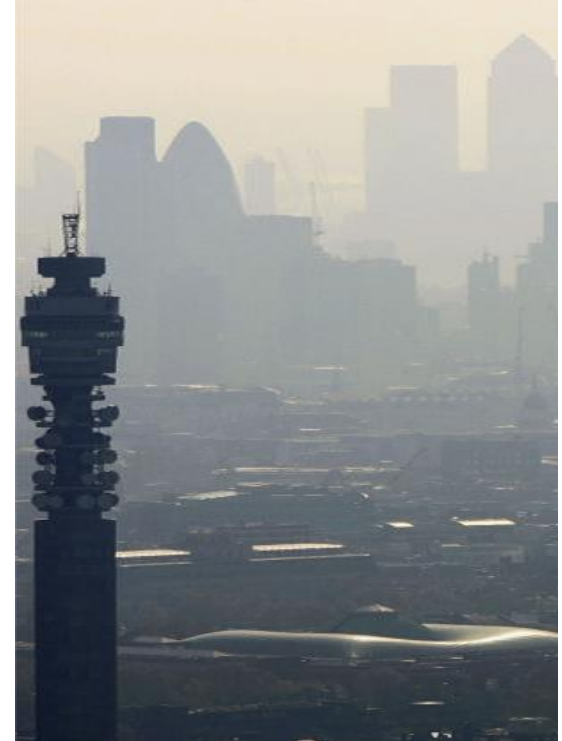
26 min

a full car every 26 minutes

24h

or two buses every day

MON SUN

or two Tube trains every week

Overview: Mayor's Transport Strategy (MTS)

- Supporting mode shift away from car travel

- Opening travel to all

- Complementing the public transport system
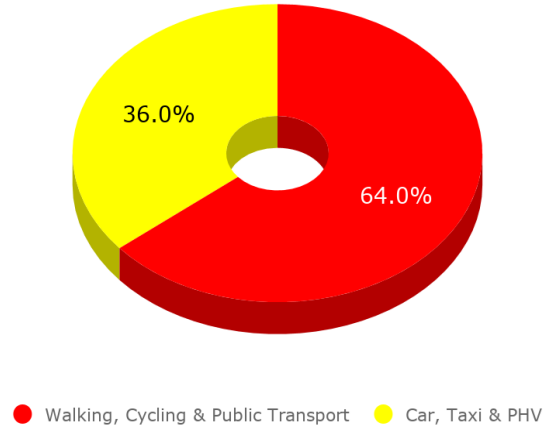
- Creating a safe, attractive environment on our streets

- Using space efficiently

- Cleaning London's air

Images courtesy of Transport for London

Overview: MTS Modal Targets

2015 actual: 26.7 million daily trips

2041 forecast: 32 million daily trips

36.0%

64.0%

● Walking, Cycling & Public Transport   ● Car, Taxi & PHV

20.0%

80.0%

● Walking, Cycling & Public Transport   ● Car, Taxi & PHV
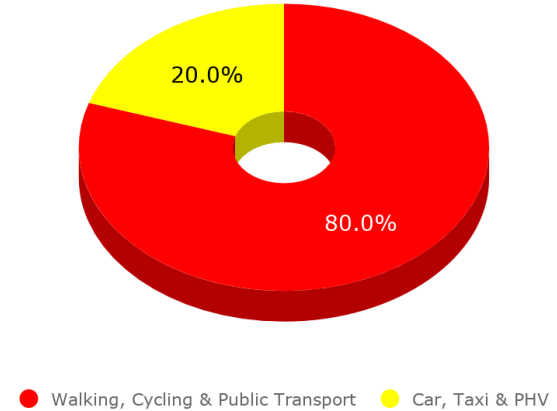
- Core Principles
  - Safety & Security
  - Environment

Safety & Security: Why it matters

- Core values

- Trust

- Integrity and reputational risk

- Complacency - do you want to go to jail?

- Not just physical safety, but increasingly digital and cyber related

Safety & Security: Vision Zero Action Plan

- Vision Zero aims to eliminate all deaths and serious injuries from London's streets by 2041

- The number of people killed on London's roads fell to the lowest on record in 2018

- However, there were still 111 fatalities and 3954 serious injuries

- During 2018, 90 people walking, cycling and riding motorcycles, which made up around 80% of all people killed on London's roads

- The number of people killed while walking fell from 73 to 56, but still makes up a shocking 50% of all deaths

- There were 12 people killed while cycling in 2018, with a further 770 suffering serious injuries

- Download the Vision Zero Action Plan: http://content.tfl.gov.uk/vision-zero-action-plan.pdf

Images courtesy of Transport for London

Safety & Security: Digital Integrity

Data & Devices

- Personal data & GDPR
- Ethics - tracking & facial recognition
- Crowdsourcing
- Theft
- Hacking & ransomware
- Reputational risk
- Liability

Safety & Security: Micromobility

Polarised opinions!

- Fun and convenient, or a nuisance?
- Regulatory differences
- Are the health benefits the same as active modes?
- Responsible behaviour
- Liability
- Suitability of infrastructure
- Data and GDPR

Environment: Ultra Low Emission Zone (1)

Proposed boundary for Inner Ultra Low Emission Zone (ULEZ)
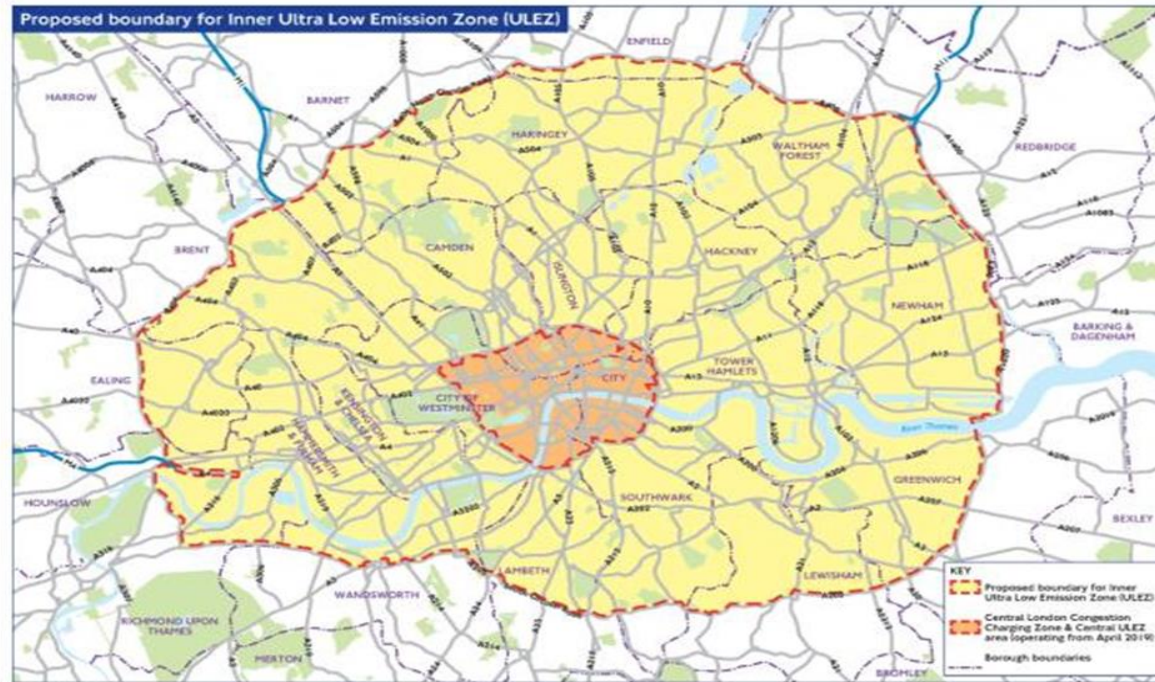
	Central	Up to N/S Circular	
Area	21 sq. km	381 sq. km	(18 times larger)
Population	136k	3.8m	(28 times larger)

Images courtesy of Transport for London

Environment: Ultra Low Emission Zone (2)

Central London ULEZ

- Less than 30% of households have access to a car or van
- 85,000 households
- 30,000 cars or vans available to households
- 25,000 households with at least one car or van available

Inner London ULEZ

- 45% of households have access to a car or van
- 1.3 million households
- 780,000 cars or vans available to households
- 600,000 households with at least one car or van available

Environment: ULEZ & eMobility (3)

- Many more Londoners will start to consider vehicle choices

- Opportunities for car clubs and new ownership/access propositions

- More evidence needed to demonstrate efficacy of plug-in hybrids, for example, geo-fencing pilots to demonstrate use of zero emission capability

- Private sector interest and investment in EV charging infrastructure and eMobility hubs

- New entrants to market expected from both Europe and beyond

- Significant opportunity for commercial vehicle market, particularly LGV and electric buses

- New horizons
  - Connected & Autonomous Mobility (CAM)
  - Urban Air Mobility (UAM)

New Horizons: Connected & Autonomous Mobility

- In July 2019, London was the first city in Europe to set out it's expectations for how organisations should approach trials of connected & autonomous vehicles

- The document is called "Connected and Autonomous Vehicles: guidance for London trials" and can be downloaded at http://content.tfl.gov.uk/connected-and-autonomous-vehicles-guidance-for-london-trials.pdf

- The key principles set out in the document are:

  - Making certain that the interactions of CAVs with people walking, cycling and using conventional vehicles are safe, predictable and manageable

  - Ensuring the right transport services, using the right vehicles, in the right places – with a strong preference for zero emission vehicles

  - Reducing the dominance of motor vehicles and their negative impact (road danger, impact on health and air quality) to encourage a shift to the healthiest, greenest and most efficient modes of travel: walking, cycling and using public transport

New Horizons: Connected & Autonomous Mobility

- A number of small scale trials are already taking place in London

- Many trials are part funded through the Government and others are privately funded

- Previous trials include:

  - GATEway (Transport Research Laboratory)

  - Nissan (Nissan)

- Current trials

  - CAPRI (AECOM)

  - DRIVEN (Oxbotica)

  - Endeavour (Addison Lee)

  - Smart Mobility Living Lab London (Transport Research Laboratory)
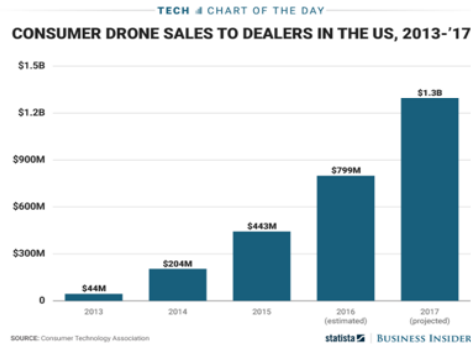
  - Streetwise (FiveAI)

New Horizons: Connected & Autonomous Mobility

Graphic courtesy of Transport for London
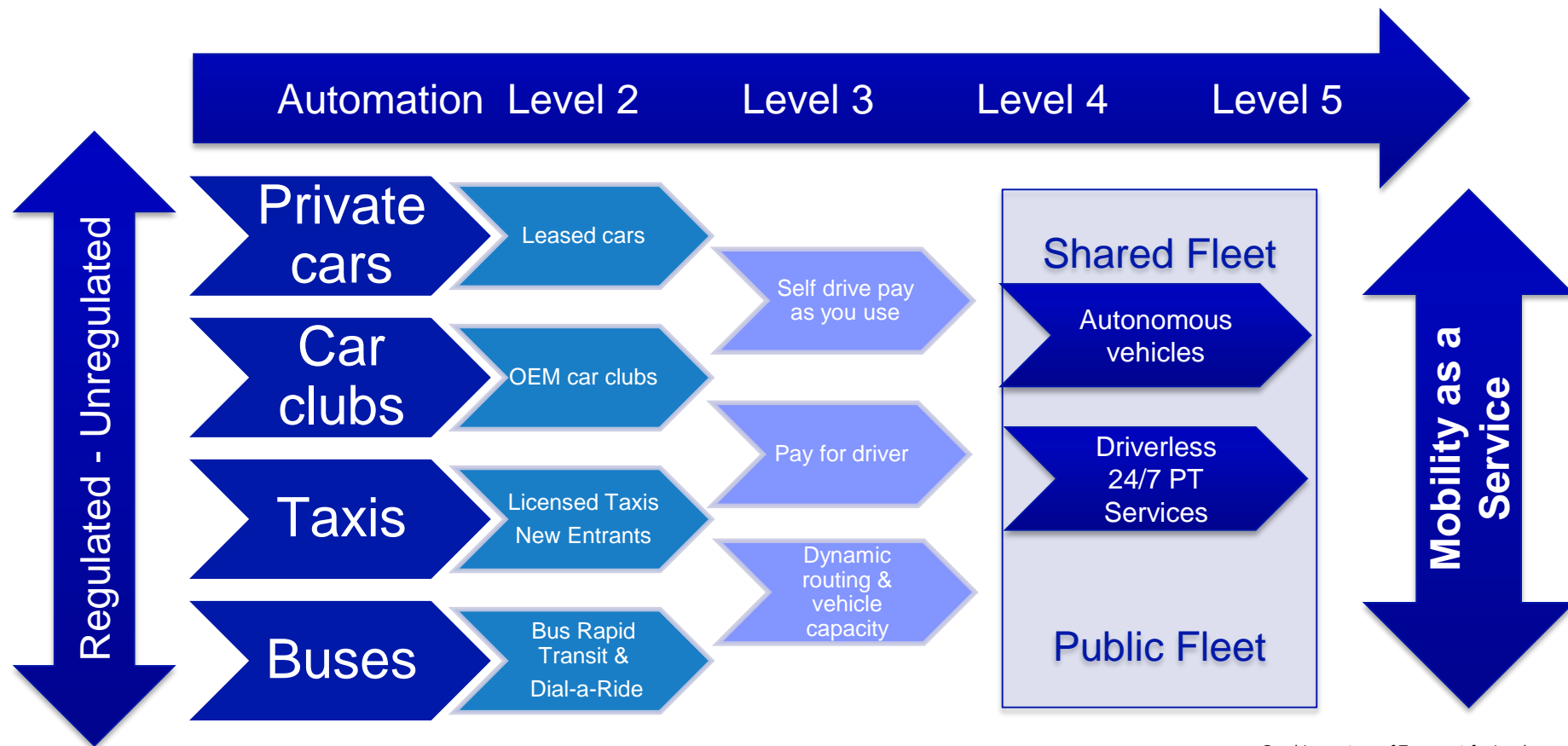
Unmanned Aerial Vehicles (UAVs): Are they relevant?

1. The number of UAVs being sold & "put to work" is **rapidly increasing**

2. There are **significant opportunities for cities** to use UAVs

3. UAVs will affect London and the way things and people move around London
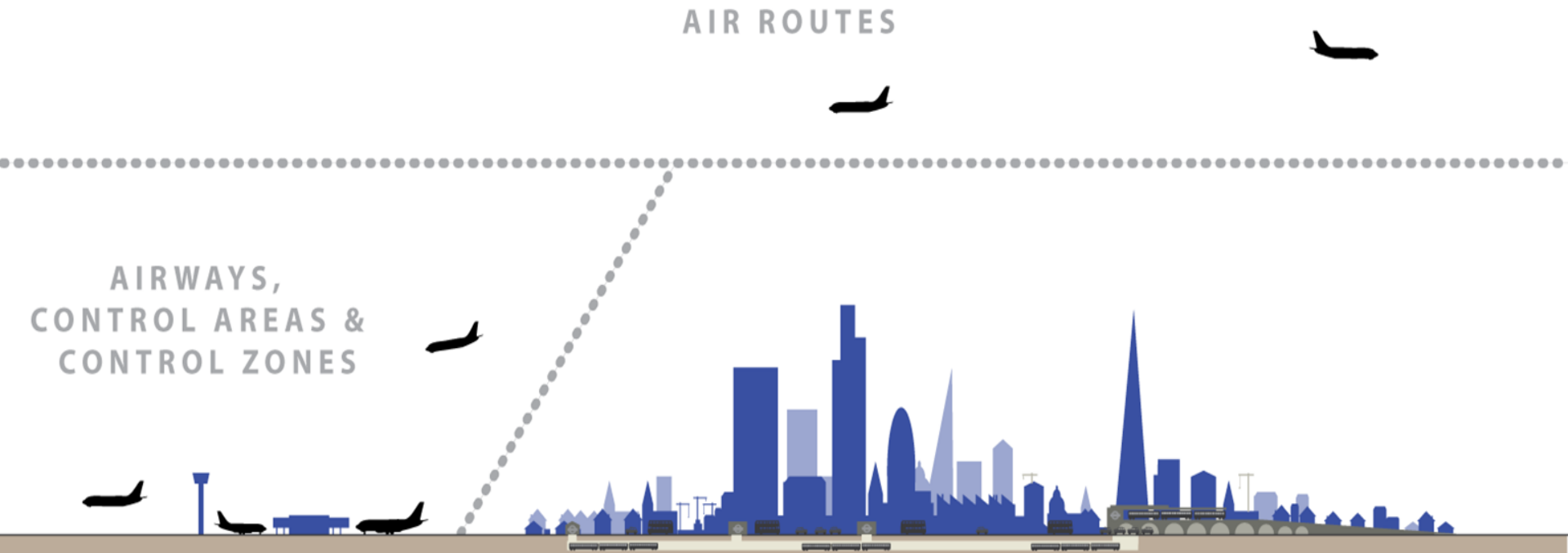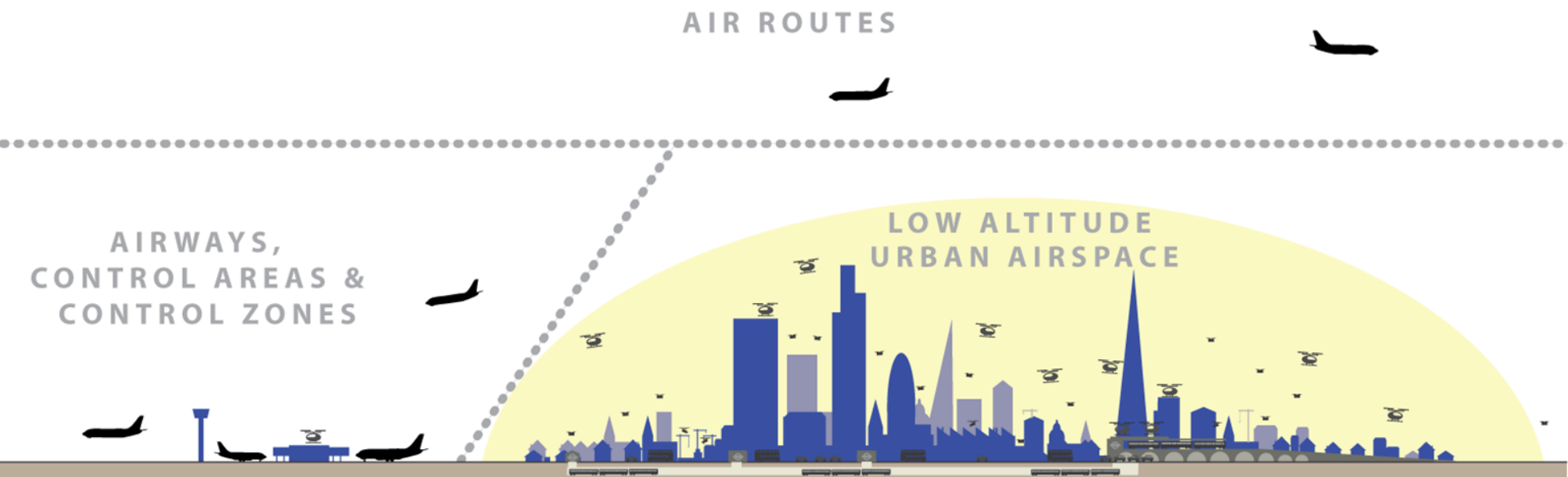

4. Who controls London's skies may change

Urban Air Mobility: A new aviation paradigm

Traditionally, aviation touches the ground in a few locations...

AIR ROUTES

AIRWAYS,
CONTROL AREAS &
CONTROL ZONES

Graphic courtesy of Transport for London

Urban Air Mobility: The concept of low altitude urban airspace

Urban Air Mobility could change that, creating a need to consider low altitude urban airspace

AIR ROUTES

AIRWAYS,
CONTROL AREAS &
CONTROL ZONES

LOW ALTITUDE
URBAN AIRSPACE

Graphic courtesy of Transport for London

It includes inspection and surveillance drones...

...(generally) flying in defined areas

LOW ALTITUDE
URBAN AIRSPACE

Graphic courtesy of Transport for London

Urban Air Mobility: For Deliveries

...delivery drones...

...flying across the city & landing in numerous locations

LOW ALTITUDE
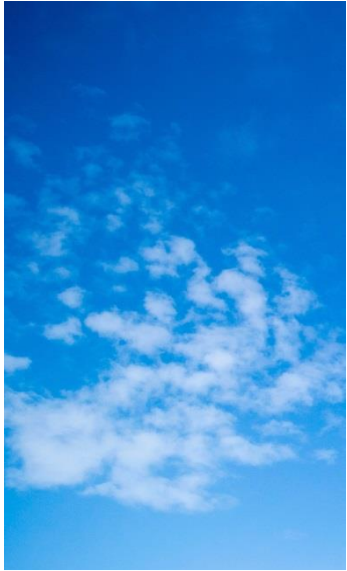URBAN AIRSPACE

Graphic courtesy of Transport for London

...there could even be passenger drones...

...flying across the city & landing in defined locations

LOW ALTITUDE URBAN AIRSPACE

Graphic courtesy of Transport for London

Urban Air Mobility: Challenges for Cities

AIRSPACE REGULATION

SERVICE REGULATION & LICENSING

CONTROL OF BUILT INFRASTRUCTURE

AIR TRAFFIC MANAGEMENT

ENVIRONMENTAL IMPACT

Graphic courtesy of Transport for London