

# London City Airport Master Plan 2020





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# Chief Executive foreword



Matt Grayson

This master plan sets out our vision for sustainable and responsible growth at London City Airport to accommodate up to 11 million passengers per year. We had intended to publish the document earlier in 2020 following consultation in 2019. However, in light of the unprecedented impact of the COVID-19 pandemic, we took the decision to defer publication, instead prioritising the safety and wellbeing of our passengers, supporting our airlines and the emergency services, as well as keeping our staff safe and protecting as many jobs as possible.

COVID-19 has undoubtedly caused a significant shock to the global economy, with the aviation and travel industry amongst the hardest hit. London City Airport was no exception. During the height of the COVID-19 crisis, we temporarily closed our doors as many people decided to stop travelling following government advice and travel bans in the UK and across Europe. While we reopened our doors in late June, the impact of quarantine restrictions and a second national lockdown have resulted in passenger numbers remaining significantly down.

We recently took the difficult decision to temporarily pause the City Airport Development Programme having completed eight new aircraft stands, a full-length parallel taxiway and new passenger facilities. The new infrastructure will allow us to provide additional capacity when demand returns and provides a firm foundation for the future terminal extensions now that the most complex infrastructure activities have been completed. While these are undoubtedly extremely challenging times for the sector, we have full confidence that the UK aviation

industry – the third largest in the world and a global success story – will return to growth. We know that demand for air travel remains strong. Polling by Survation undertaken over the summer shows that nearly two thirds of UK business leaders see international travel as key to their future prospects.

We also know that domestic aviation is key to economic recovery. Aviation is not just an industry itself. It also acts as an enabler of other sectors such as trade, tourism, hospitality and conferences. The Government clearly recognises the importance of the aviation sector to the wider economic growth prospects of every part of the UK and we are confident that a comprehensive testing regime will be approved to replace the need for quarantine which will see the sector gradually return to growth as people begin to travel for business and leisure again.

While there remain significant challenges for aviation and no doubt a short-term re-adjustment of the industry overall, we believe that it will bounce back strongly in the medium to long-term as it has following other economic crises. We continue to have full confidence in the vision set out in our new master plan and that is why we have taken the decision to publish it now, despite the ongoing impacts of the pandemic.

In June last year, we published our draft master plan and undertook a 16-week consultation process where we asked for your views on how the airport could respond to increasing passenger demand in a sustainable and responsible way over the next 15 years. We were extremely pleased with the extent of feedback



received from all our stakeholders during the consultation, including members of the local community, businesses, local government and passengers. The level of engagement reflects the important role we play for the UK, London and our local communities and we would like to thank everyone who shared their views. We have now reviewed all responses and have taken them into account in finalising this master plan.

Our master plan shows how the airport can grow to provide capacity for 11 million passengers and 151,000 aircraft movements annually which we expect to be reached at some point in the mid to late 2030s and supporting up to 5,300 local jobs. As recent events have shown, it is not possible to be precise about future trends. However, we believe that the fundamentals underpinning

future growth at London City Airport remain; including the airport's location in a growing East London and its ability to connect to the UK's regions and Europe. This master plan shows what can be achieved and how London City Airport can continue to be a generator of jobs and economic benefits that will help to underpin the recovery and success of London by providing national and international connectivity.

We are also conscious that the future growth of the airport is conditional on operating to the highest environmental standards and helping the UK, as a whole, meet the climate change challenge. One of the main areas of concern that was expressed in the consultation responses was aviation's impact on climate change. For many years, the aviation industry has focussed on reducing its

environmental impact, and we at London City Airport, in particular, have made significant progress in reducing our own emissions and making the operation much more sustainable. Building on our recent accreditation as a carbon neutral business for airport operations and our target to achieve net zero carbon emissions by 2050, we absolutely understand the climate challenge and that more must be done. As part of our commitment to achieving net zero we will also look to achieve Level 4+ carbon accreditation and will work with industry partners and the Government's new Jet Zero Council to position London City Airport as a leader in the future of flight and sustainable aviation.

The feedback we received during the consultation has informed our approach to growth that we believe can be clean and green while creating more opportunities for our communities. In publishing our master plan, we have also carefully considered the Government's net zero carbon obligations in the Climate Change Act, which enshrines the Paris Agreement into law, and our own contribution to meeting those targets. For example, we are targeting 80% of journeys to be made by public and sustainable transport modes by the time we reach 11 million passengers and up to 90% beyond that. Furthermore we will accelerate opportunities for our airlines to operate more of the cleaner, quieter, new generation aircraft.

We have published this master plan now in order to help others to understand how sustainable and responsible growth can be achieved and to allow this to be factored into future Local Plans and development proposals nearby. As we come out of the current crisis,

we will closely monitor changes that influence how we operate. In the months ahead we will work with airlines and Government to help restore confidence to the UK aviation market and we will continue to support our local authority and our communities as they plan for life beyond the crisis. Given the uncertainty around the UK's economic recovery and as the Government develops its long-term policy on aviation and climate change, we will keep this master plan under review.

The airport has a bright future, and as you will read in this master plan, can contribute to helping London maintain its position as the greatest city in the world, with an airport that helps the UK, once again, lead the way in defining the future of flight.

**Robert Sinclair**  
Chief Executive Officer

# Consultation summary

As we look to the future,  
London City Airport  
will continue to listen  
and collaborate



Alongside this master plan, we have published a Consultation Report. The Consultation Report provides more details around the consultation activity undertaken during the 16-week public consultation on the draft master plan, which ran from June to October 2019. It also contains an overview of the feedback received on the key issues and how we have responded to the main themes raised by our stakeholders.

We were extremely pleased with the level of engagement on the draft master plan and the extent of feedback received across all of our stakeholders including the local community, elected representatives and local authorities, industry and businesses, as well as our passengers. The consultation was widely advertised in local papers and online, with almost 12,000 people visiting our designated consultation webpage. Five public consultation events were held, and these were attended by over 100 people. We received over 2,100 detailed responses and believe this reflects the importance of the airport and its future plans to a broad cross section of the community.

Overall, the detailed feedback was balanced. Responses from industry, passengers and local businesses offered broadly supportive and positive feedback, particularly with respect to the economic benefits, job creation and improved connectivity and choice that growth would bring, especially to East London. While there was also some positive sentiment from members of the public, local authorities and political representatives, concerns were raised regarding the potential impacts of growth on the local community and the environment, particularly with respect to climate change, air quality, noise impacts and the consideration

of changes to the existing 24 hour weekend curfew, as well as the first and last half hour of operations. We also received 2,473 campaign postcards produced by HACAN East, which were opposed to any increase in flights or changes to existing operating hours.

## Responding to your feedback

We have taken the time to carefully consider all feedback received during the consultation period and this has informed the preparation of this master plan. In the draft master plan we forecast that passenger demand to use London City Airport would increase over the next 15 years (by 2035) to around 11 million passengers per annum (mppa) and up to 151,000 air transport movements (ATMs). This growth could be delivered by making best use of our existing runway and supporting up to 5,300 local jobs<sup>1</sup> (an increase of around 2,700<sup>2</sup>). Since the publication of the draft master plan in 2019, the aviation industry has been severely impacted by the COVID-19 pandemic.

However, we remain very confident that the impacts from the pandemic will be short term and that passenger demand will recover and continue to grow. We now expect that the forecast growth to 11 mppa and 151,000 air transport movements may be achieved slightly later than previously forecast. This master plan reflects our revised expectations for growth in demand and is based on our current prediction that the airport could accommodate 11 mppa somewhere in the mid to late 2030s depending on the pace and profile of the recovery from the pandemic. The feedback on the draft master plan forecasts remains valid given that the same passenger and movement forecasts continue to underpin this master plan.

Having taken on board the feedback received, this master plan addresses some of the key themes raised as part of the consultation process as follows:

- **Airport operating hours:** Recognising the concerns raised by many who responded to the consultation, we will maintain the eight-hour night time flight curfew. We also have no immediate plans to seek to extend the operating hours, either during the week or at weekends, however, we will keep this under review as the airport recovers from the impact of the COVID-19 pandemic. Should any future adjustments be proposed, these would be considered and consulted upon through the planning process before a decision is taken by the relevant authority.
- **Climate change and carbon emissions:** Since the draft master plan was published in June 2019 there has been a significant political and public focus on climate change, including the Government legislating the commitment to net zero carbon emissions by 2050, as well as climate emergency declarations from numerous local authorities surrounding the airport. Our master plan recognises these changes and commits to building on our 30% reduction in carbon emissions over the last five years and our recent accreditation as a carbon neutral business for airport operations. We are focused on ensuring that we respond to demand sustainably. The airport will work towards achieving net zero carbon emissions by 2050 for its own operations and will also work with the airline industry to deliver their ambitious carbon reduction targets<sup>3</sup>.

- **Improving transport to and from the airport:** In the draft master plan we sought to further improve our performance as the UK's leading airport for public transport use by passengers, with a target of achieving 80% of journeys by public and sustainable transport modes by the time we reach 11 mppa<sup>4</sup>. However, acknowledging the Mayor of London's ambitious transport targets, we believe we can go further and will work towards a target of 90% of journeys by DLR, walking, cycling and other sustainable transport modes by 2041. Reaching these targets will require support and continued investment from Transport for London (TfL), local authorities, communities and local partners – particularly to deliver extended operating hours on the DLR, additional bus services, enhanced pedestrian and cycle networks and, potentially, a dedicated Elizabeth Line station. We will also review opportunities to limit parking and introduce an emissions and occupancy-based charging scheme for vehicles to help reduce congestion and support the expansion of the London Ultra Low Emission Zone when it comes forward.
- **Air quality:** We have strengthened our commitment to significantly increase sustainable transport to and from the airport, limit car parking spaces and increase the provision and future availability of electric charging points and cycle bays. This is in recognition of the London Borough of Newham's recently published Climate Emergency Action Plan and Air Quality Action Plan which cite road transport as one of the primary sources of ground level pollutant concentrations in the local area<sup>5</sup>.



- **Aircraft noise:** In the consultation feedback there was strong support for any future growth in aircraft movements only to occur within our existing noise contour area limit. By incentivising the utilisation of cleaner, quieter new generation aircraft we will explore opportunities to bring forward reductions in the contour area and, as a result, the number of people that would otherwise be within it. We will also explore further improvements to our Sound Insulation Scheme where appropriate.

**We were extremely pleased with the level of engagement, which showed the importance of the airport and its future plans to a broad cross section of the community**



- **Airspace change:** Separate to the consultation on the draft master plan, we also engaged with stakeholders in summer 2019 to develop design principles under Stage 1 of the airspace change process. However, as part of the draft master plan consultation, we received feedback suggesting that respite routes should be introduced as part of the airspace change programme. This option will be fully considered, among others, as design options are developed ahead of any future planned public consultation.
- **Making best use of our runway:** To further align with Government policy, as recently restated, we have identified areas on the existing airfield where there is potential to accommodate a greater number of new generation aircraft if our airlines renew their fleets as we expect.

Where relevant, we have updated this master plan's content to reflect the passage of time since we consulted on the draft in summer 2019.

As we look to the future, London City Airport will continue to listen and collaborate with our local authorities, communities, passengers, airlines, businesses and other partners to grow in a sustainable and responsible way. We recognise that legislation, policies, the economy and people's needs change with time. To reflect this, realising the forecast growth in line with this master plan is intended to be approached in a flexible manner and the capacity could be delivered in different stages as demand reaches current permitted development limits and evolves over time.

As explained in the accompanying consultation report, many of the key themes raised by participants would be addressed in more detail should any planning application come forward in the future to deliver some or all of the forecast growth in the master plan. An airport master plan is not intended to provide the level of information that some of our stakeholders suggested they might like to see at this stage. Its function as a non-statutory document is to give a high-level indication of potential future development. In line with Government guidance, this master plan is intended to provide a clear statement of intent to the local community and stakeholders and to inform local authority development plans regarding potential future development.

# London City Airport in numbers

All data from 2019

**5.1 MILLION  
PASSENGERS**

the highest in our history

**45**  
**DESTINATIONS**

**11**  
**AIRLINES**



**£75,000**

awarded each year to local organisations  
through our Community Fund



**73%**

of passengers travelled  
to/from London City Airport by  
public transport or Black Taxi



**LONDON  
LIVING WAGE  
EMPLOYER**

only London airport to be both London Living  
Wage and Mayor of London's Good Work  
Standard accredited

**OVER 2,200**

people employed at the airport<sup>6</sup>, with almost  
two thirds living within our local area<sup>7</sup>



**46%**

business travellers



**54%**

leisure travellers

**SKYTRAX  
BEST  
AIRPORT**

under 5 million passengers in 2019



**BEST AIRPORT  
IN EUROPE**

at the Airport Council International  
Airport Service Quality (ASQ) awards



**OVER  
400,000**

of our passengers live within  
5 miles of the airport



**LEVEL 3+ CARBON  
ACCREDITATION**

meaning we are one of six  
Carbon Neutral Airports in the UK

# Executive summary

Mid-20th century



## Evolution of the airport

Since opening our doors in 1987, London City Airport has connected other parts of the UK, Europe and the rest of the world to the City of London, Canary Wharf and East London. As a key part of its transport infrastructure, we have helped London claim and retain its position as one of the leading finance cities of the world and one of the largest centres of global aviation demand, supporting upwards of £11 billion per year of trade in services<sup>8</sup>.

Business travel remains a core part of our service, but as we grow with London, and East London in particular, our catchment area and passenger mix has expanded beyond our traditional markets. In 2019, more than 400,000 of our passengers lived within five miles of London City Airport, demonstrating our appeal to the communities around us. In addition to a growing list of 'point to point' destinations, in recent years we have seen several major national flag carriers launch multiple daily services between London City and their European hub airports allowing passengers to connect onto their global networks. This means that

passengers can now fly to virtually anywhere in the world from London City Airport.

Our speedy, efficient and friendly service, with the best onward connections to central London and the wider transport network primarily via the Docklands Light Railway (DLR) provides a highly valued service to our staff and passengers. Our customers can be on the DLR within 15 minutes of leaving their aircraft, at Canary Wharf within 15 minutes of getting on the DLR, or in the City of London within 21 minutes of getting on the DLR. This excellent connectivity is why two thirds of our passengers choose to use public transport to travel to and from the airport, the highest proportion of any airport in the UK.

Our vision is to make travel to and from the centre of London as quick, easy and sustainable as possible for all our business and leisure passengers, as well as improving access by sustainable modes for those living and working closest to the airport. We will continue to invest and work collaboratively with key partners like Transport for London to ensure that we offer

London City Airport in 1987. Credit: Vic Abbott



London City Airport in 2017. Credit: Jason Hawkes



# Passenger increase of 40% between 2013 and 2019

an industry leading, end to end passenger experience and to promote sustainable travel options getting to and from the airport.

### Setting the scene for this master plan

Our previous master plan was published back in 2006 and covers the period to 2030 when we predicted that the airport would handle eight million passengers and 171,000 flights each year (143,000 scheduled, 27,600 business aircraft). Since then the aviation industry, passenger trends and London have all changed. It is now time to update our master plan.

The growth in passenger numbers up until the beginning of 2020 has been higher than we anticipated in 2006, but the growth in the number of flights is lower than forecast. This is in part a reflection of a greater proportion

of slightly larger jet aircraft including new generation aircraft using the airport, continued strength in demand, industry innovation, introduction of new airlines and fewer business aircraft movements. This trend is evident from the airport's 6.3% year on year growth in passenger numbers in 2019, which was delivered with broadly the same number of aircraft movements as the previous year, around 83,000.

There have also been significant developments in the aviation industry, not only in the UK but across Europe. Connectivity has improved significantly, thanks to enhanced city to city routes and greater regional connectivity. London too has continued to prosper, and this is projected to continue, particularly in East London and close to the airport. In December 2018, the Government published its draft Aviation Strategy: 'Aviation 2050: The Future of UK Aviation'. This set out the policy principle that airports should make the best use of their existing runways, subject to environmental issues being addressed, to meet demand for air travel whilst minimising the need for new airport infrastructure, Government support for this policy was restated as recently as February 2020.

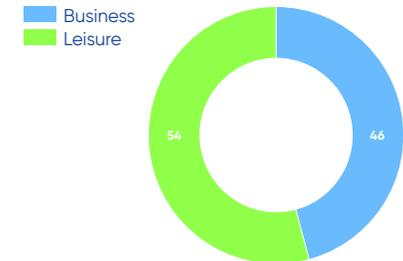
### Meeting projected demand

Following the grant of planning permission by the Secretaries of State for Transport and Communities and Local Government in July 2016, we have begun delivering new infrastructure and passenger facilities which will transform the airport. This £500 million private investment places significant emphasis on sustainability and will extend the terminal buildings, deliver additional aircraft parking stands that can accommodate more of the cleaner, quieter, new generation aircraft and provide a parallel taxiway to make better use of our single runway. Once complete, the airport will become a more welcoming high-quality gateway to London, with more space and enhanced facilities and services for passengers.

Our passenger numbers grew by over 40% in the six years to 2019 when we welcomed over 5.1 million business and leisure travellers, the most in our history. Our current planning permission allows us to accommodate up to 6.5 million passengers and 111,000 aircraft movements per year. These annual limits are expected to be reached in the coming years.



Based on CAA data



CAA Passenger Survey 2019

## We are meeting the challenges set out in the Government's draft 2050 Aviation Strategy

The increase in larger aircraft now being operated as well as the forecast increase in new generation aircraft now make it likely that we will reach our 6.5 million annual passenger limit before our 111,000 annual ATM limit. The aviation industry is dynamic and ever changing and this master plan is sufficiently flexible to respond to a number of different short-term growth permutations in terms of the relationship between passenger and ATM growth and potential re-fleeting decisions by airlines. Whilst there are significant challenges for the UK economy and the aviation industry in the short term as a result of COVID-19, this master plan vision is based on a predicted return to growth over the master plan period as the economy and passenger demand for business and leisure travel re-emerges in parallel with a growing economy and returns to anticipated levels over the next few years.

As passenger numbers and aircraft movements reach currently permitted limits, the changes shown in this master plan would allow the airport to meet the significant forecast demand from both business and leisure passengers, which would be a welcome boost to the wider London economy and, in particular, support continued growth in the East London economy.

### Master plan purpose – vision for future growth

This master plan sets out a vision for how we believe we might best respond to continued demand for air travel over the long term. It also sets out how we believe this could be achieved in a sustainable and responsible way over the next 15 years or so. It has been adapted from the draft master plan to reflect the passage of time, feedback received from the consultation, and presents an appropriate and realistic set of potential development scenarios for the airport.

Making the most effective use of our existing runway and infrastructure remains at the forefront of our vision in this master plan, which is in keeping with Government policy. We have not included proposals for a new runway, to extend the length of our existing runway or to significantly expand our existing site boundary. Instead the master plan shows how we can respond to and meet demand by making modest, incremental changes to our existing airfield to help pave the way for more new generation aircraft. These aircraft are up to 17% more fuel efficient than current models and, coupled with more seats, this means carbon emissions per passenger mile flown are lower than with existing and previous generation aircraft.

This master plan shows how we will meet the challenges set out in the Government's draft 2050 Aviation Strategy by setting out what we have achieved to date and demonstrating our commitment to sustainable growth, while further enhancing sustainable transport to and from the airport, embracing innovation, creating jobs and keeping London connected.

This master plan also explains how we currently operate within a set of strict and comprehensive noise and environmental controls. These include a noise contour area limit, steep approaches and a noise quota count system – the only one used in the UK to control daytime noise. Our plans will ensure continued operation within these controls, particularly our noise contour area which we will seek to reduce in size over the master plan period. We believe it is also important to maintain an eight-hour night ban on flights as we understand the importance of respite to our local residents and those living under our flight paths.

Our plans to make the best use of our runway will also accelerate airlines' plans to invest in more of the quieter, cleaner new generation aircraft by providing infrastructure to use more of these aircraft at the airport.

Subject to meeting the forecast demand and adjusting how we operate, we estimate that with up to 11 million passengers the airport could support approximately 5,300 jobs locally – an increase of 2,700<sup>0</sup>. When the wider economic benefit to tourism and trade is considered, our overall economic contribution is expected to increase to over £2 billion per year.



## Growing sustainably and responsibly

As we adapt to meet demand from both business and leisure passengers, we have a number of strategic priorities and principles to ensure that we grow sustainably and responsibly.

### Jobs and community

- To create more job opportunities for our local community over the master plan period by working collaboratively with the London Borough of Newham and our partners to increase local new recruits;
- To create more opportunities across our supply chain for local businesses to thrive.

### Make best use of our runway

- To make best use of our existing runway and infrastructure by making modest changes to our site and avoiding any significant extension of our boundary;
- To further improve passenger experience, choice and accessibility for all users of the airport.

### Connectivity

- To be an inclusive airport serving business and leisure passengers alike, while maintaining our reputation for speedy, efficient and friendly service, with the best onward connections to central London through the DLR;
- To seek to retain and improve our position as the UK's best performing airport for sustainable transport use.

### Noise

- To maintain our commitment that we will never operate throughout the night and that no aircraft that are noisier than those currently allowed to fly will do so in the future;
- Not to exceed our current noise contour area limit and to explore opportunities with all our airlines to reduce the contour area over the master plan period;
- To add to the current comprehensive suite of noise controls to ensure that we mitigate noise effects associated with any growth beyond our current limits (including further improvements to our Sound Insulation Scheme, which already has the current joint lowest daytime threshold in the UK at 57dB).

### Carbon emissions

- To continue putting sustainability at the heart of our operations and to work with partners to achieve and exceed industry standards on carbon emissions;
- To build upon our carbon neutral status under the Airports Council International Airport Carbon Accreditation Scheme and achieve Level 4+<sup>10</sup> while working with industry partners and the Government's new Jet Zero Council to position London City Airport as a leader in the future of flight and sustainable aviation;
- To achieve net zero carbon emissions from the airport's operations by 2050, consistent with the UK Government's target;
- To work with the airline industry to minimise carbon emissions from aircraft and help them achieve their targets.

### Air quality

- To play our part in meeting London's air quality targets and encourage our partners to do the same;
- To embrace, encourage and facilitate an increase in passenger access to the airport by sustainable transport modes.

# 1 Introduction

This section provides a brief summary of the growth of London City Airport since opening in 1987. It goes on to give an overview of the existing airport site and operations, as well as some of the local employment benefits and community initiatives. It also provides a brief update on the £500 million investment programme to further improve our terminal and passenger facilities.

## **1.1 Our story so far**

## **1.2 The airport site**

## **1.3 Getting to and from the airport**

## **1.4 Employment**

## **1.5 Our community**

## **1.6 Current airport operations and controls**

## **1.7 Investment programme**

# 1.1 Our story so far

## An airport in the heart of London

London City Airport in 2017



London City Airport is located in London's Royal Docks, approximately six miles east of the City of London, two miles east of Canary Wharf and half a mile away from the ExCeL Exhibition and Conference Centre. The surrounding area includes a mix of residential, industrial and commercial uses. There is also a significant amount of planned development and regeneration in the Royal Docks and the surrounding area.

We opened in 1987 with a plan to connect businesses in the City of London and the then newly established Canary Wharf with domestic and European markets. Since then the airport has grown progressively alongside East London, and in 2019 we handled over 5.1 million passengers and around 83,000 flights, with services to 45 domestic and European destinations.

As East London has grown, our catchment area has evolved beyond our traditional business passenger market. With a diverse selection of mainstream flag carrier airlines, who offer global hub connectivity as well as point-to-point services, we now have a more diverse passenger base, with an almost equal split between passengers travelling for business and for leisure, and increasingly including residents from our local communities using the airport.

In 2016, a consortium made up of Alberta Investment Management Corporation (AIMCo), The Ontario Municipal Employees Retirement System (OMERS), Ontario Teachers' Pension Plan and Wren House Infrastructure Management purchased the airport. Collectively they have a portfolio of infrastructure investments across the United Kingdom and in the aviation industry internationally<sup>11</sup>. The airport's owners are ethical, long term investors not only in the airport, but also in the UK and its future.

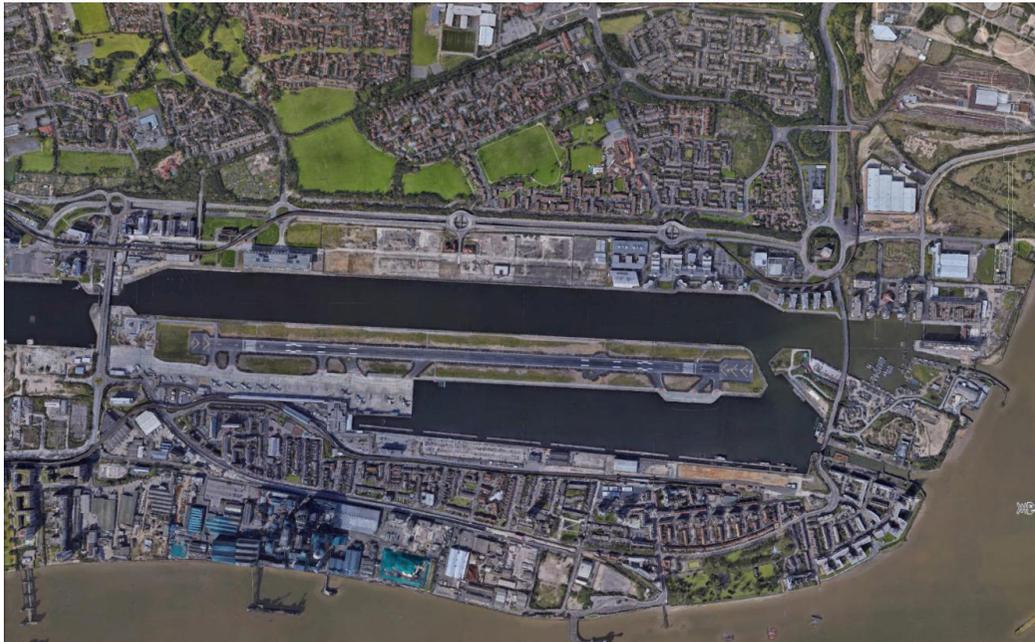
We take great pride in offering an outstanding passenger experience. Our award winning, fast and efficient train to plane proposition has played a key role in growing passenger numbers year on year. In 2019, we were awarded the Best Airport in Europe (2 to 5 million passengers) at the Airport Council International's Airport Service Quality (ASQ) awards, as well the title of best airport in the world under 5 million passengers at the 2019 SKYTRAX awards.

# 1.2

## The airport site

### An international airport in London's Royal Docks

Figure 1.1: London City Airport aerial image (2017)



The airport site illustrated in Figure 1.1 extends to approximately 60 hectares. It was constructed on the site of a disused shipping dock, and the runway is situated on the strip of land between King George V Dock and the Royal Albert Dock.

The existing runway has a declared Take-Off Run Available (TORA) length of 1,199 metres. It is used by aircraft taking off and landing in either an easterly (Runway 09) direction or westerly (Runway 27) direction depending on the wind direction. The total paved area extends to 1,508 metres.

The existing aircraft stands are located between the runway and terminal building and are serviced by the existing West and East Piers which adjoin the terminal building. The airport currently has 20 operational stands for use by scheduled aircraft. Eleven of these aircraft stands date from the original airport in the 1980s with the more recent ones built over King George V Dock being completed in 2008 and 2020. The 12 newer stands, located on the east apron over King George V Dock, can accommodate the largest aircraft currently operating at the airport, including the cleaner, quieter, new generation aircraft such as the Airbus A220-100.

The existing terminal building has been reconfigured on several occasions and is expected to be transformed as part of the City Airport Development Programme (CADP), which is described in section 1.7.

Our corporate aviation facility (known as the Jet Centre) at the western end of the airfield (location 1 on Figure 1.2) handled around 4,000 aircraft movements in 2019 and is used by smaller company/ privately owned or leased aircraft. It accounts for a small proportion of the total annual number of aircraft movements.

The airport also owns much of the land to the south of King George V Dock. In addition to the existing terminal forecourt areas, this land is currently used for offices, engineering facilities and car parking.

We recently completed the construction of a digital air traffic control tower which is currently undergoing testing prior to becoming fully operational shortly (location 4 on Figure 1.2). It will be a global first on this scale, using state-of-the-art high definition cameras and sensors to provide a live feed with a 360° panoramic view of the airfield, along with sensory and operational data, which will be sent via super-fast secure fibre connections to a new National Air Traffic Services (NATS) control room in Swanwick, Hampshire.

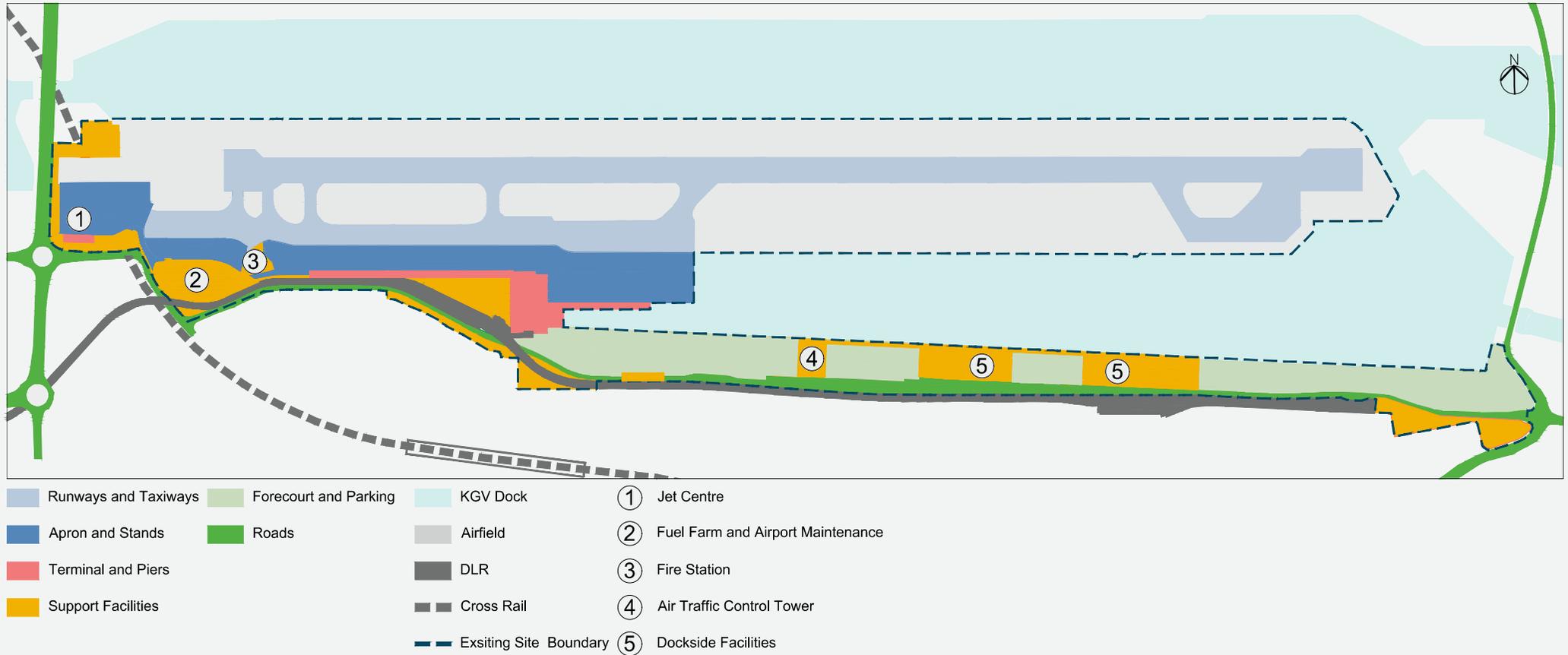


Figure 1.2: Existing airport plan

# 1.3 Getting to and from the airport

## The highest public transport use of any UK airport



London City Airport's location  
in the London airports system

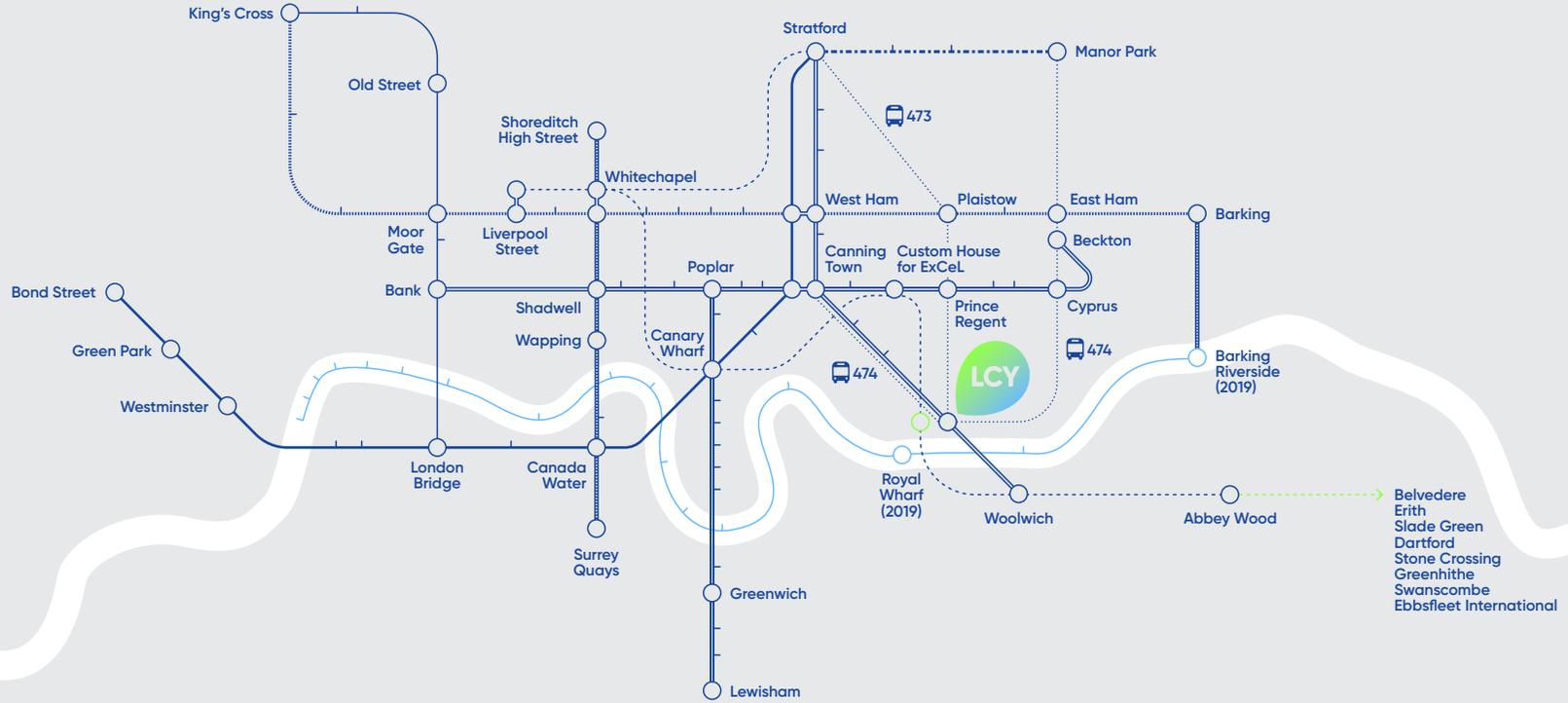
Since the opening of the airport's DLR station in 2005, we have developed a reputation for offering a quick and reliable passenger experience. We have the highest public transport use amongst passengers of any UK airport<sup>12</sup>, with only 9% arriving by private car<sup>13</sup>. Our Airport Surface Access Strategy sets ambitious short-term targets to achieve 75% of passenger journeys by public and other sustainable transport modes and fewer than 40% of staff travelling by single occupancy car by 2025. This is supported by our recently published Travel Plan, which includes targets for managing the impacts of the airport's staff and passengers on the local road network.

The DLR offers a high frequency service into central London (every four minutes at peak times), connecting with the wider tube and rail network. Passengers can get from the DLR to their gate in 20 minutes and from aircraft to DLR in 15 minutes. This speedy and efficient service is an important part of our ongoing passenger proposition.

We also benefit from two bus services, the 473, running every 10 to 15 minutes between North Woolwich and Stratford, and the 474, running 24 hours at a similar frequency between Canning Town and Manor Park.



- Northern Line
- Docklands Light Railway (DLR)
- Jubilee Line
- Overground
- Hammersmith & City
- Elizabeth Line
- Bus Route
- TFL Line
- Thames Clippers
- Potential future Crossrail extension



Approximate travel times from London City Airport





Our current priorities and initiatives for further improving how people get to and from the airport are listed below. We continue to work with stakeholders, including the Airport Transport Forum, London Borough of Newham, TfL and the DLR to realise these:

- Earlier DLR services: to better match staff shift patterns and demand from early morning departing passengers;
  - Improving DLR services: delivering additional rolling stock, station staff and capacity, as part of our CADP investment;
  - Connections to Crossrail: to provide connectivity when the Elizabeth Line opens and for an interchange at Stratford station;
  - Connecting with future planned river services: promoting the availability of the recently completed Royal Wharf Pier;
  - Access to the best and most up to date travel information, wayfinding and journey planning: giving our passengers and employees information in both digital and physical formats, including in-carriage on the DLR and London Underground;
  - Inclusive, considerate design and equal access: to ensure that the airport is welcoming for all passengers and staff;
  - Actively promoting healthier modes of transport such as cycling and walking: by investing in new cycle and walking routes and infrastructure, including a new link from the airport to the proposed cycle and walking route for the Royal Docks;
  - Supporting improvements in local air quality and lower carbon emissions: by providing additional electric charging facilities, including rapid charging for black taxis.
- Additional priorities for our staff include:
- Provision of cycle parking and hire facilities at the airport: to encourage staff to cycle to work;
  - Lift-share initiative: launched in 2018 to encourage our staff to travel to work more sustainably to reduce congestion and reduce local emissions;
  - Limiting use of private cars: by managing demand through pricing of parking spaces and limiting staff car parking passes.

# 1.4 Employment

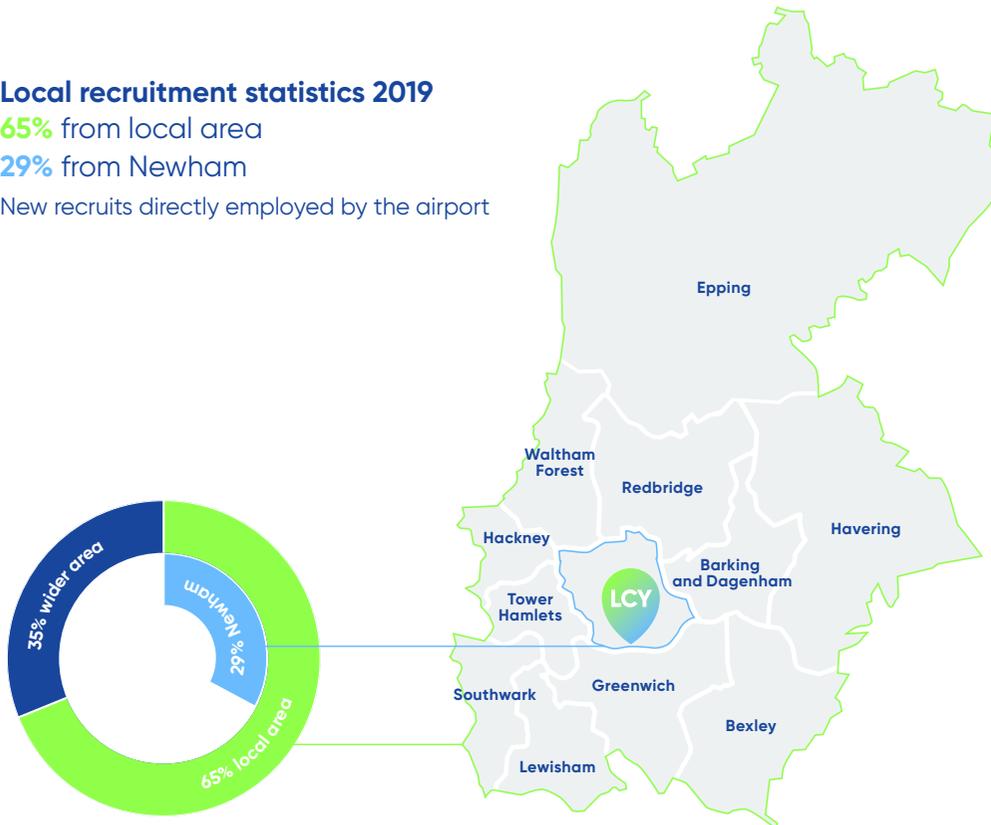
## Creating job opportunities for East Londoners

### Local recruitment statistics 2019

65% from local area

29% from Newham

New recruits directly employed by the airport



As a London Living Wage employer and a Mayor of London Good Work Standard certified employer, we pride ourselves on creating opportunities for local people. Having a high proportion of staff from the local area makes our airport more resilient and helps us reflect the energy, vibrancy and diversity of our local area when welcoming people from around the world. We are one of the biggest private sector employers in the London Borough of Newham with over 2,200 people employed onsite in 2019, with two thirds living in the local area<sup>14</sup>. In 2019, almost one third of employees newly recruited by London City Airport were from Newham. These figures exclude construction jobs which peaked at around 1,100 in 2019. Despite short term restructuring as a result of the COVID-19 pandemic, we expect the number of people employed at the airport to rebound as the aviation industry as a whole rebounds from the crisis.

Since being established in 2009, our award-winning Take Off Into Work scheme<sup>15</sup> and other employment schemes have placed more than 750 Newham residents in employment at the airport in departments such as security, customer services, ramp services, retail and finance.

Additionally, over the last 5 years over 12,300 young people participated in our educational and community programmes, including visits to the airport to learn about our operations, as well as attending events to inspire young people about careers in science, technology engineering and maths (STEM). In so doing, we aim to help address the rising skills shortage in this area<sup>16</sup>.

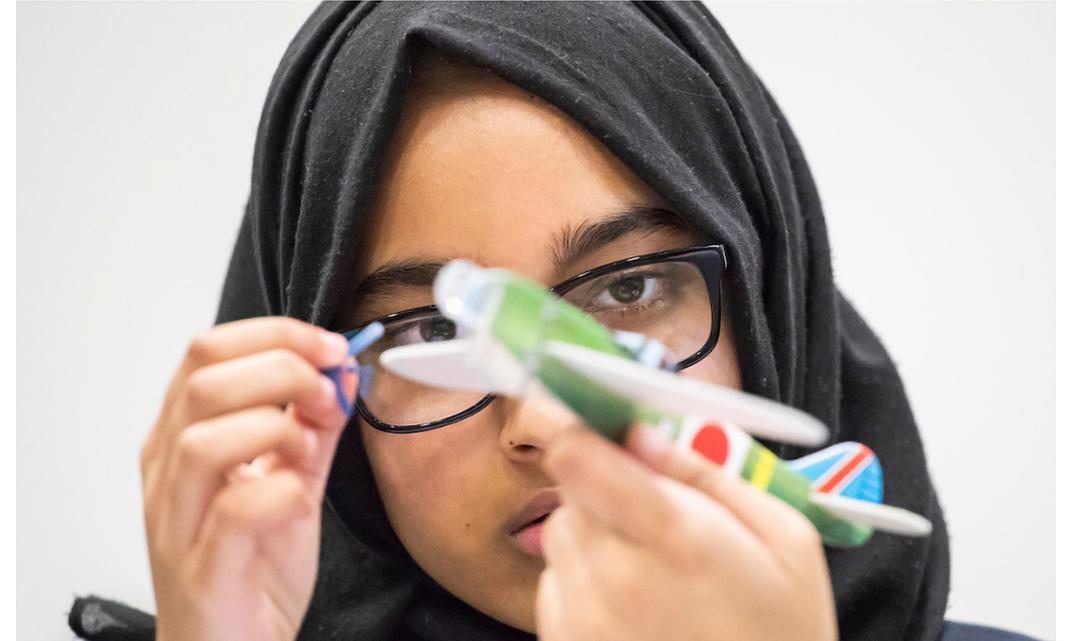


# 1.5 Our community

## Proud to be part of the fabric of Newham and East London

We believe in transparent, regular engagement with our local communities. We want residents to be engaged and informed. That's why we host regular events and meetings across the local area, publish a quarterly community magazine circulated to almost 10,000 local households as well as working with our Consultative Committee on community and environmental issues.

We have a longstanding partnership with Richard House Children's Hospice for which the airport's staff have generated nearly £1 million. Over the past four years our staff have participated in volunteering activities across East London focused on wellbeing, equality and biodiversity, investing over 7,300 hours of their time. As part of the current investment programme the airport is spending over £7 million on education, employment and community investment initiatives in the local area. A summary of our most significant initiatives is included below.



# Investing in the people of East London



## Newham

Newham's SMEs participated in our annual 'Royal Docks Meet the Buyer' event. Over 170 East London businesses participated in 2019, raising the amount spent with Newham businesses to £6.5 million.



## Waltham Forest

The airport is encouraging its visitors to discover East London's culture hotspots through the creation of a video series with the Londonist: 'Beyond Zone 1', featuring Waltham Forest as the London Borough of Culture 2019.



## Tower Hamlets

80 residents from Tower Hamlets received employability training and 50% were offered a job through the collaboration between the airport and the council supporting Workpath's overall achievement of 5,000 residents into employment in 2018.



## London City Airport Master Plan



## Redbridge

Wanstead High School pupils won the 'Women in Aviation' 2019 challenge, joining 300 female students from 10 different East London schools to hear more about the opportunities in the aviation industry.



## Barking and Dagenham

Sydney Russell School pupils won the airport's annual STEM in Aviation Day in 2019, joining 450 East London secondary pupils from 22 different schools to experience how STEM subjects are used in the aviation industry.



## Greenwich

600 secondary students increased their confidence and learned skills for future employment through participation in the 'Runway to Success' education programme initiated by the airport in collaboration with the Royal Borough of Greenwich.



Key:

**%** % of new recruits at London City Airport from each borough (2019)

**£** Investment in local community\* London Benchmark Group (LGB) data 2016-2019

**👤** Students engaged through education 2016-2019

**🕒** Volunteering hours 2016-2019

\*Investment in addition to current planning commitments and obligation



## Case studies

### STEM in Aviation events

The aviation industry is seeing a rising demand for STEM skills. Our 'STEM in Aviation' events aim to tackle this rising skills shortage by inspiring school students. In 2019, up to 500 East London students from 23 different schools attended our 'STEM in Aviation Day'. This was supported by Rajesh Agrawal, Deputy Mayor for Business, and representatives from the aviation sector including London City Airport, British Airways, Cranfield University, Widerøe, Accenture, Bechtel, BAM Nuttall and the Emirates Aviation Experience.

The students experienced the variety of ways that STEM can be applied in the aviation industry and about the opportunities that exist, including at London City Airport.



### Royal Docks Meet the Buyer event

Our aim is to be a catalyst of local economic growth by helping local businesses to thrive. Our 'Royal Docks Meet the Buyer' events give East London's small and medium sized enterprises (SMEs) a unique opportunity to create ongoing relationships with buyers in London's Royal Docks and beyond. The inaugural event in 2018 was very successful and brought together 132 local SMEs with £1.1 million of business transactions. Last year's event built on this success and welcomed 170 businesses from 17 London boroughs. The event reinforces our record for supporting local businesses through our supply chain, which equated to more than £9 million spent with East London businesses, including £6.5 million spent in Newham with 21 businesses.

### Community Fund

In 2019 we launched our Community Fund of £75,000 and received more than 200 applications. Funding was awarded to 30 organisations across 10 London boroughs. Some of the organisations that received a grant include: Free your Mind CIC from Barking & Dagenham; Samaritans from Redbridge; Lambeth Libraries; Poplar Partnership and Up-Rising Leadership from Tower Hamlets; Magpie Project and Community Food Enterprise; Young Lewisham Project; Home-Start Havering; Chats Palace from Hackney; and Inspire EBP and Blind in Business working across Waltham Forest.

In response to the COVID-19 pandemic, the airport also provided an additional £50,000 to help nine foodbanks across Newham, Greenwich, Tower Hamlets and Barking & Dagenham, which play a critical role in getting essential supplies to vulnerable people and families.



Magpie Project and Community Food Enterprise



### Women in Aviation Programme

To attract the next generation of female aviation leaders on the airport's doorstep, the 2019 Women in Aviation Programme brought together 300 female East London pupils to encourage them to consider a career in the industry. The initiative aims to help challenge historic gender associations for certain roles and historical stereotypes.



# Creating domestic supply chain opportunities

While we are proud to create supply chain opportunities to local businesses and SMEs, we also create supply chain opportunities right across the UK as shown in Figure 1.3. Recent examples of the wide variety of contracts within the City Airport Development Programme (CADP) include:

- 1 Dyer and Butler**  
(part of M Group Services, Stevenage)  
**HQ Location:** Southampton  
**Works:** Airfield taxiway and drainage works and the airfield services works
- 2 BAM Nuttall**  
**HQ Location:** Camberley, Surrey  
**Works:** Piling and decking for new 75,000 m<sup>2</sup> concrete deck extension
- 3 Careys**  
**HQ Location:** Southampton  
**Works:** Ground clearance and civil engineering works to prepare for new passenger and support facilities
- 4 Buckingham Group**  
**HQ Location:** Stowe, Buckinghamshire  
**Works:** Digital Air Traffic Control Tower
- 5 Reach Engineering and Diving Services (REDS)**  
**HQ Location:** Rugby, Warwickshire  
**Works:** Dock surveying
- 6 Dynasafe Bactec Ltd**  
**HQ Location:** Dartford, Kent  
**Works:** Unexploded ordnance survey work
- 7 Kier**  
**HQ Location:** London  
**Works:** Construction of new passenger and support facilities in the Western Service Yard

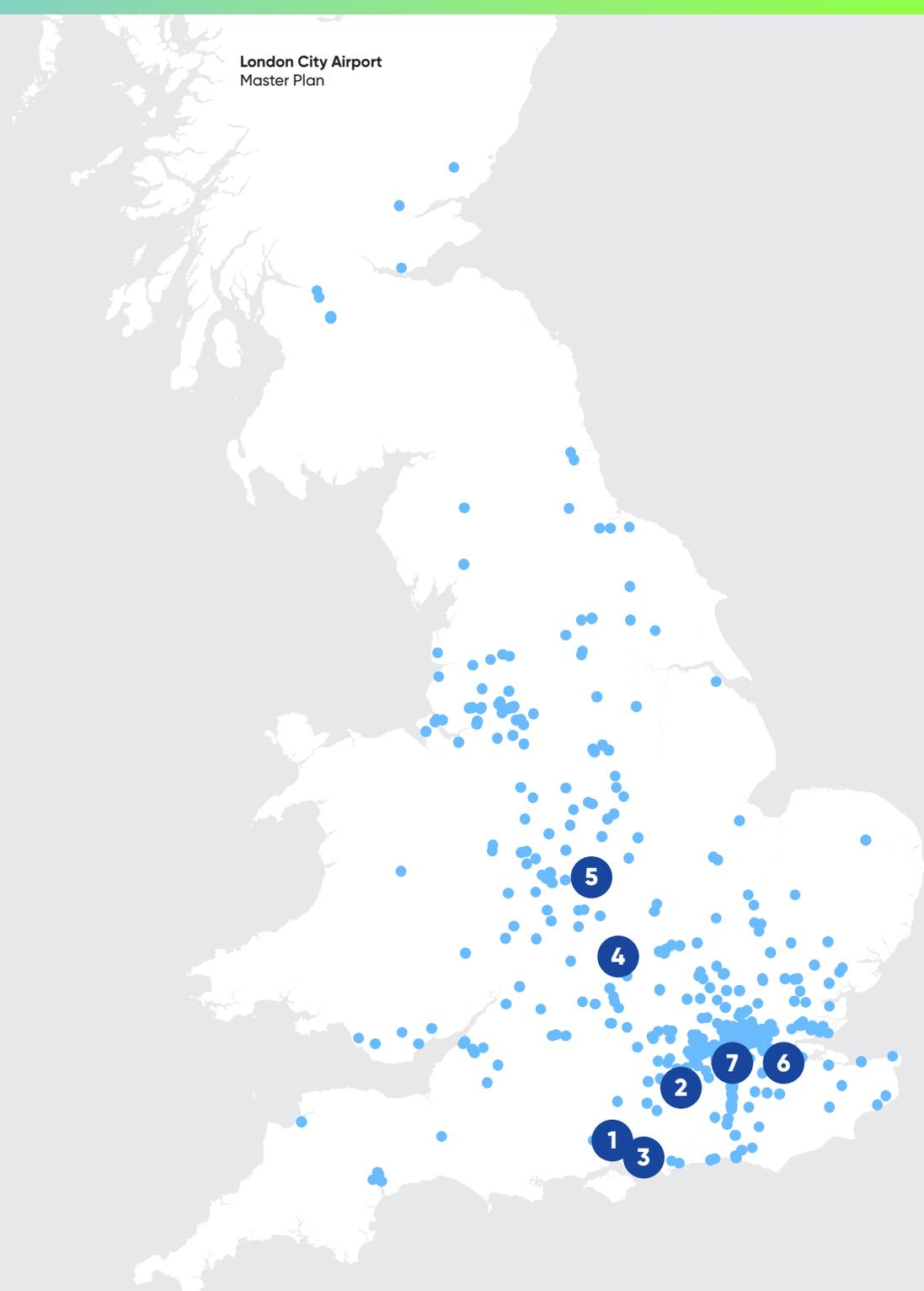


Figure 1.3: The airport's UK-wide supply chain

# 1.6 Current airport operations and controls

## Managing and reducing the effects of our operations



Our current operating hours include an eight-hour night-time curfew on all flights between 22.30 and 06.30 and a 24-hour weekend closure between 12.30 on Saturday and 12.30 on Sunday. These were introduced in 1998. Flight numbers are also limited at weekends and Bank Holidays as well as in the first and last half hour of each day's operations.

In terms of our main noise and operational controls, we have some of the most comprehensive of any airport in the UK. We are extremely conscious about managing and reducing impacts on our local community, those under our flight paths, and on the environment more broadly. Each year we publish an annual report<sup>17</sup> documenting our performance and progress on meeting our operational and environmental targets.



### Noise and operational controls

- All aircraft take a steeper approach with a glide slope of 5.5 degrees to reduce noise impacts on local communities under the arrival flight paths;
- Operating within a noise quota count annual budget, which is based on the noise performance of individual aircraft types;
- Operating within a noise contour area limit that is checked annually. This relates to the 57 dB  $L_{Aeq,16h}$  noise contour<sup>18</sup> and has an area limit of 9.1 km<sup>2</sup>. This is supported by our Incentives and Penalties Scheme to encourage airlines to operate aircraft more quietly;
- Operating a comprehensive Sound Insulation Scheme for residential dwellings and public buildings. The scheme is tiered so that those closest to the airport receive a higher specification of insulation. The trigger for eligibility for treatment is currently the joint lowest of any UK airport. Further details are available in our 2018-2023 Noise Action Plan on our website<sup>19</sup>;
- Carrying out comprehensive air quality monitoring onsite, including monitoring ambient air quality and sharing the results with the local authority. Near real time data is available online<sup>20</sup> and the findings are reported annually;
- Operating an Air Quality Management Strategy to help us further improve performance against the UK air quality objectives for all pollutants monitored - these are currently all within the relevant limits.

# 1.7 Investment programme

## A £500 million transformation of our passenger facilities and airfield

Figure 1.4.1: Aerial view of recently completed parallel taxiway and larger aircraft stands



In 2016, the airport secured permission for a £500 million investment programme at the airport, including growth to 111,000 aircraft movements and 6.5 million passengers annually. Once fully built out, the City Airport Development Programme (CADP) will transform the airport, providing vital new terminal and airfield infrastructure and a much-improved passenger service while retaining the airport's modest size and speedy passenger service. Once complete, CADP will deliver more jobs at the airport and in the local area, with ambitious targets to secure 70% of new jobs for local residents, 40% of which will be for Newham residents.

Construction of CADP started in 2017 and to date eight additional Code C aircraft stands have been delivered on a deck to the east of the existing apron over King George V Dock. The new stands will allow more of the cleaner, quieter, new generation aircraft to use the airport. The new stands are connected to the existing runway by a new eastern parallel taxiway to the south of the runway, running from west to east. This will allow for the more efficient use of the runway particularly during peak periods and deliver up to 45 movements per hour from 25 aircraft stands in total.

Figure 1.4.2: Escalator leading to departures area in new terminal





Figure 1.4.3: View of CADP terminal and new passenger forecourt



While construction was recently paused due to the short term impacts of COVID-19, temporary immigration and baggage facilities are already in place to accommodate the CADP build which includes comprehensive updates and extensions to the existing terminal buildings and a pier to serve the new aircraft stands to the east of the terminal. Once built, the terminal extensions will provide new check-in, baggage handling facilities, commercial areas and a departure lounge. The approved plans also allow the existing terminal building to be updated and reconfigured to accommodate a mixture of improved processing facilities for departing and arriving passengers, while the new pier would provide access to new gates and associated seating areas.

Permission is also in place for a reconfiguration of the terminal forecourt to the east of the terminal to deliver new accommodation for buses as well as new drop-off and pick-up for taxis and private cars (location 4 on Figure 1.5). A new hotel will also be provided within walking distance of the terminal for passenger convenience (location 5 on Figure 1.5). If the hotel is built out in future, it is projected that up to 200 additional jobs could be created.

The CADP plans also include a decked car park (location 7 on Figure 1.5). This has been safeguarded to allow future flexibility to adapt the infrastructure and consolidate onsite parking into a single multi-storey structure, with centralised provision for electric charging to encourage low emission and zero emissions vehicles. This is explained further in Section 4.

Figure 1.4.4: Entrance to new terminal



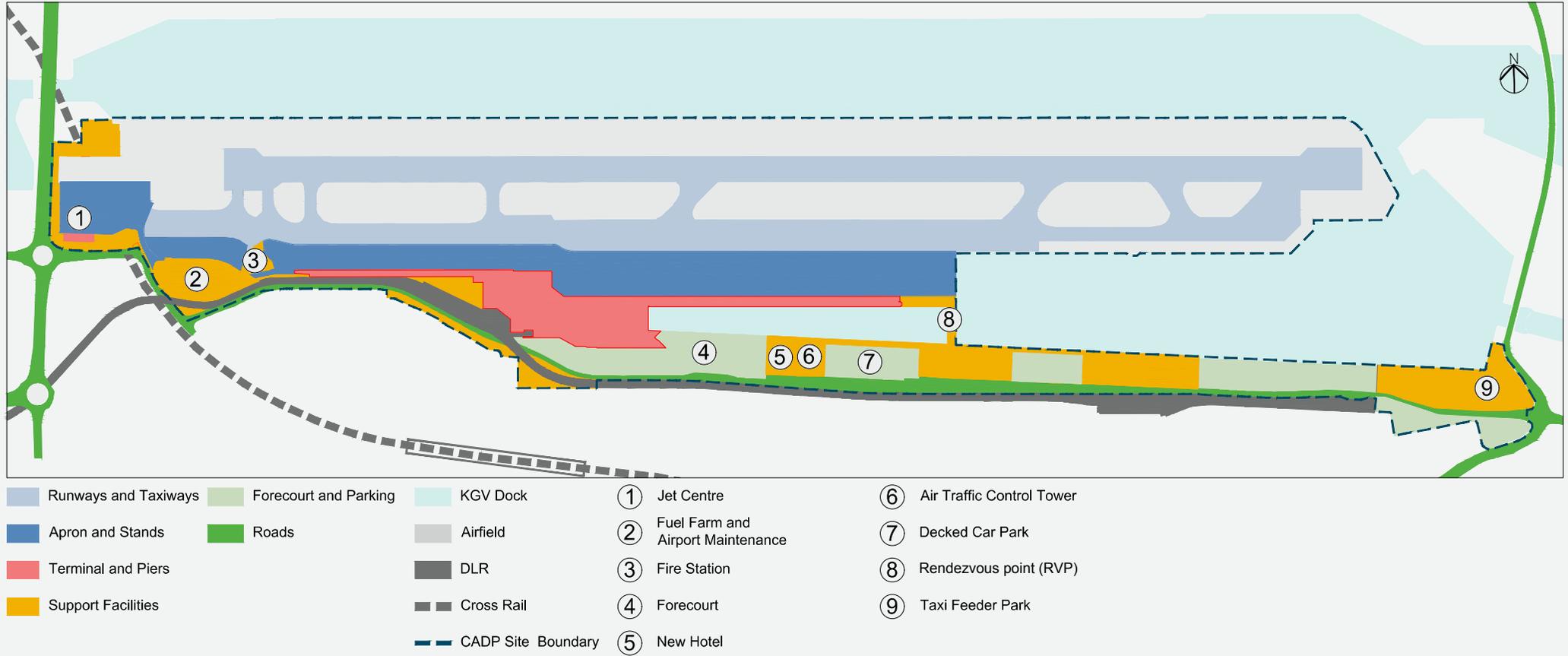


Figure 1.5: Site plan following completion of CADP

# 2 Context

This section gives some background and context on the previous 2006 master plan and presents the emerging population growth, particularly in East London and the demand for aviation. It also comments on the other relevant considerations taken into account when preparing this master plan including policy and airspace change.

## **2.1 2006 master plan**

## **2.2 The growth of London**

## **2.3 Demand for aviation**

## **2.4 Aviation infrastructure and operations**

## **2.5 Airspace modernisation**

## **2.6 Policy**

# 2.1 2006 master plan

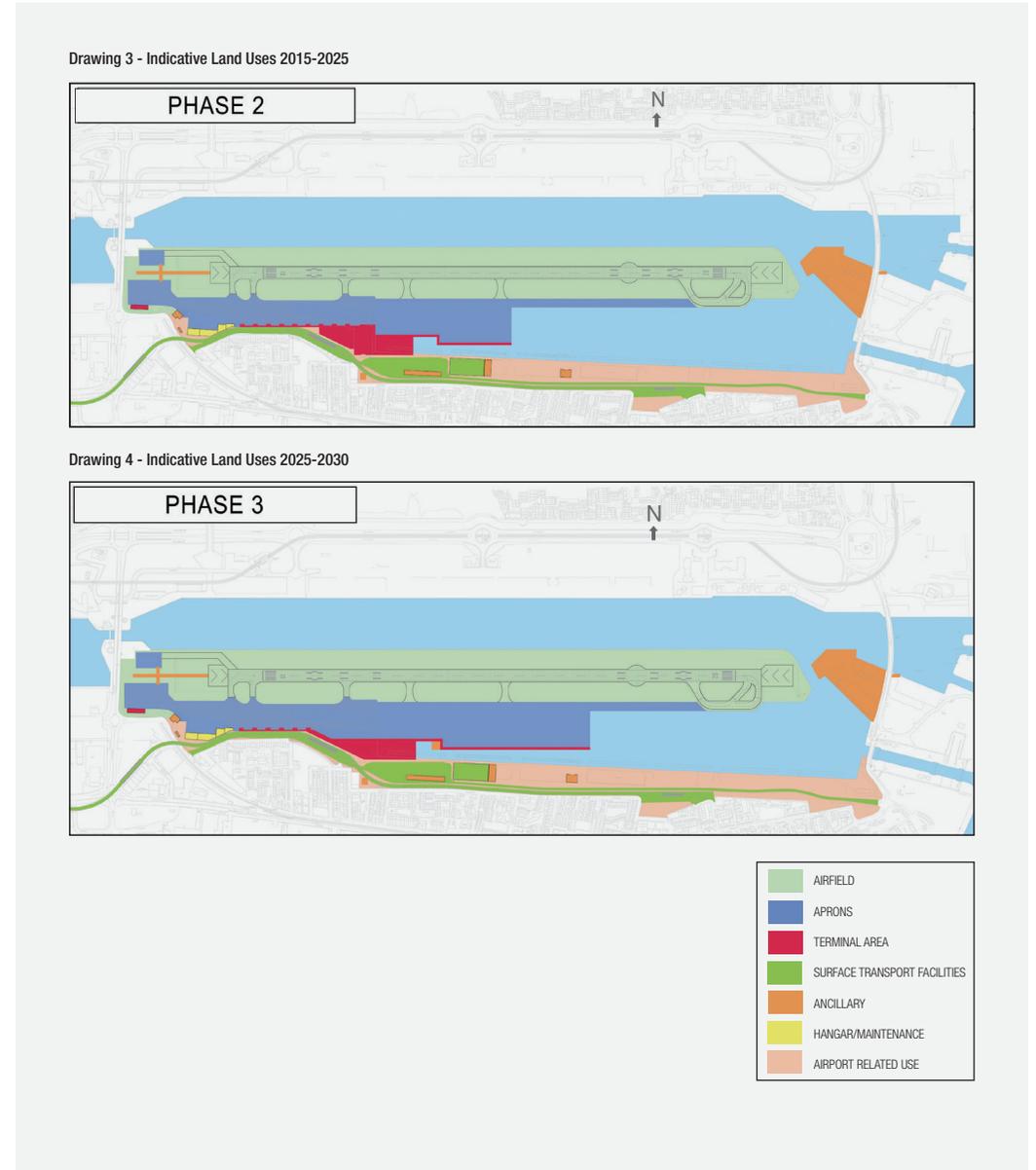
## How London City Airport has developed

The airport's current master plan was published in November 2006. At that time, the airport handled 2.5 million passengers per year, and it was expected that growth would occur at 9% per annum up to 2010 and by 6% per annum beyond that to 2030. The 2006 master plan has broadly informed development at the airport since it was published.

Three phases of development were shown to illustrate how the airport would develop to accommodate 3.5 million passengers by 2015 (Phase 1), 6 million passengers by 2025 (Phase 2) and 8 million by 2030 (Phase 3). As shown in Figure 2.1 the diagrams in the document show the progressive expansion of the terminal and stands building out over King George V Dock eastwards in a phased manner.

The accompanying forecasts anticipated reaching 143,000 scheduled aircraft movements and 27,600 business aircraft movements by 2030 (total 170,600 aircraft movements) carrying 8 million passengers each year. CADP, once complete, will have broadly delivered Phase 2 of the 2006 master plan. It is now appropriate to look beyond the current timescale covered by the 2006 master plan and to update Phase 3 to reflect changes to legislation, Government and local policy, future forecast demand for air travel, and newer aircraft types.

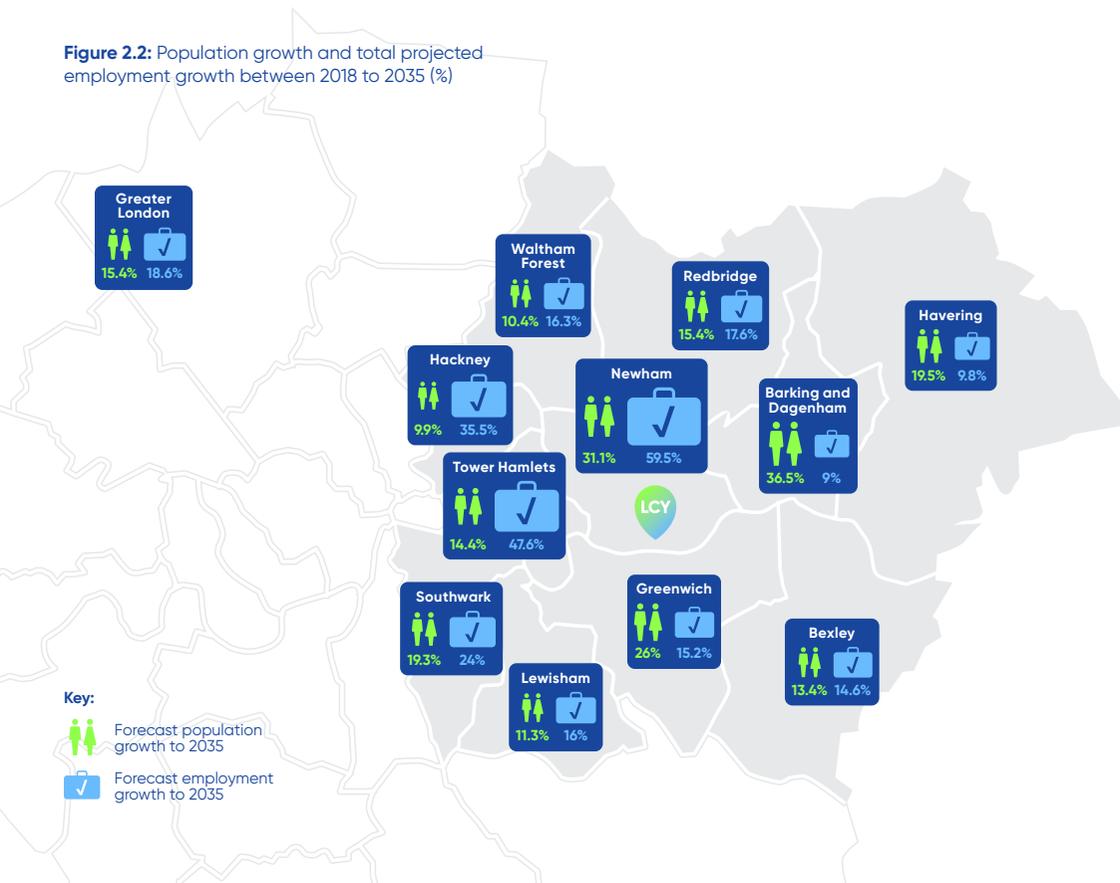
Figure 2.1: Extract of London City Airport master plan 2006 – Phases 2 and 3



# 2.2 The growth of London

## The world's best city is fast-changing

Figure 2.2: Population growth and total projected employment growth between 2018 to 2035 (%)



Currently, there are over eight million Londoners and the population is projected to grow to just under ten million by 2025, larger than any time in the city's history. The Greater London Authority (GLA) projects an increase to 10.4 million by 2035.

With foundations laid by the successes of Canary Wharf, the Olympic Park and our own operations at London City Airport, London's gravity is moving eastward. Strong growth is projected specifically in East London, where the population in Newham alone, home to the airport, is expected to grow by 31%, equivalent to over 100,000 people by 2035.

Employment forecasts also paint a picture of a rapidly expanding East London. As the GLA's projected employment estimates show in Figure 2.2 below, the boroughs in the east of London demonstrate strong projected rates of total employment growth. When looking at the five boroughs with the fastest growing total employment in the Greater London area, four boroughs are local to the airport: Newham, Tower Hamlets, Hackney and Southwark<sup>21</sup>.

According to Savills, within 60 minutes travel from the airport there will be 4.1 million homes over the next five years, a 21% population increase to 10.7 million people by 2039, and 6.7 million jobs by 2041<sup>22</sup>. In Newham, office space is set to increase quicker than any other borough in the capital. Employment at Canary Wharf currently provides 120,000 jobs<sup>23</sup> and is expected to double in the next 20 years<sup>24</sup>. Overall, strong growth in office space and housing is expected, making East London an increasingly attractive place for businesses and individuals to move to. While these projections were published prior to the COVID-19 pandemic and may be readjusted in the short term, they still represent the strong growth envisaged in both the local population and employment over the longer term, consistent with the master plan period.

Being uniquely located in the heart of East London, the airport has significant potential to serve demand and provide jobs as well as improving connectivity to domestic, European and global markets.

# Selected regeneration schemes near the airport



**1 Canada Water<sup>25</sup>**  
Plans for a large 53-acre regeneration of Canada Water – which include a new high street, town centre and leisure centre – has a resolution to grant planning permission. The Canada Water master plan would deliver up to 3,000 homes as well as workspace and retail, leisure, entertainment and community space.

Time from the airport:  
15 mins (DLR/Jubilee line)



**2 Canning Town and Custom House<sup>26</sup>**  
Work is well underway for a £3.7 billion project in Canning Town and Custom House. By 2018 the programme had delivered over 2,200 new private and affordable homes. Developers are currently on site building another 1,200 new homes. By the end of the regeneration programme, around 12,000 new homes will have been built.

Time from the airport:  
9 mins (DLR)  
12 mins (bus)  
9 mins (cycle)  
29 mins (walk)



**3 Silvertown Quays<sup>27</sup>**  
The £3.5 billion regeneration of Silvertown (in the West Ham area of Newham) is currently being implemented. The 62-acre site centres around the restoration of the 1930s Millennium Mills. Once completed, the major development will provide 3,000 homes including affordable housing, offices, a school, health centre, retail facilities and a new Roundhouse music venue.

Time from the airport:  
4 mins (cycle)  
7 mins (walk)



**4 North Woolwich<sup>28</sup>**  
A series of proposed developments along the River Thames at Woolwich will bring a set of historic buildings back into use. Royal Arsenal Riverside will create 5000 new homes, a hotel, office space and a community centre. Spray Street will include over 650 new homes, restaurants, retail and leisure facilities, and new public spaces. Other projects include Thomas Street and the Woolwich Estates.

Time from the airport:  
15 mins (DLR)  
16 mins (cycle)  
30 mins (walk)



**5 Greenwich Peninsula<sup>29</sup>**  
An £8.4 billion revamp of 150 acres of former industrial land and gasworks around the O2, opposite the financial district of Canary Wharf, has planning consent to build 15,720 homes in seven neighbourhoods, along with a new design district, two schools, health services, shops and offices. It is the biggest regeneration project by a single developer in the UK and is expected to be completed by 2032.

Time from airport:  
15 mins (DLR/Jubilee line)



**6 ABP Royal Albert Docks**  
Part of the Royal Docks Enterprise Zone, ABP is creating a new waterside development and dynamic commercial district. It will transform Royal Albert Dock into London's third business and financial district, becoming a hub for businesses from Asia looking to reach new markets in Europe and for European companies seeking to do business with them and expand into the Far East. The 4.7 million sq. ft development comprises mainly offices, with residential, retail provision as well as improvements to the public realm.

Time from the airport:  
10 mins (cycle)  
5 mins (bus)  
19 mins (walk)



**7 Thameside West**  
Thameside West is a proposed riverside development on one of the largest brownfield sites in London that seeks to play host to more than 5,000 new homes, multiple new retail spaces, a new school, a new nursery, spaces for creative industries as well as a new London parkland. There are also plans for a new Thames Wharf DLR station. The plans were approved by the Mayor of London in August 2020.

Time from the airport:  
10 mins (DLR and walk)  
8 mins (cycle)



**8 Barking Riverside**  
Located along the banks of the River Thames, covering 443 acres, Barking Riverside will include 10,800 new homes of mixed size and style. There is provision for 65,000 square metres of commercial floor space for shopping, restaurants, cafés, community and leisure facilities, healthcare and schools. There are also plans for large open spaces, public squares and a new rail station with bus and river transport interchange providing excellent links to central London.

Time from the airport:  
25-30 mins (DLR/tube/Overground)  
35 mins est. (DLR/river)



**9 Royal Wharf**  
Royal Wharf will comprise of 3,385 residential sites on a prime riverside location, incorporating a communal square, high street, 2.4-acre park and a riverside promenade. The development is served by the recently opened Royal Wharf Pier – a new riverboat terminal in collaboration with MBNA Thames Clipper, providing river connections to central London.

Time from the airport:  
6 mins (DLR and walk)  
7 mins (cycle)



**10 Thames Estuary**  
In 2016, The Thames Estuary Commission was formed to develop a 2050 vision for the area focusing on five productive places. One of these places, referenced as 'City Ribbon' corresponds to the catchment area of the airport. The vision aspires to convert this area into a hub for production with spaces for start-ups and small and medium sized businesses, through the creation of creative enterprise zones and strategic transport infrastructure. Within the vision, the airport is recognised as a significant strategic asset providing employment and international connectivity. In March 2019, the Government's response to the Commission gave commitments to support and deliver growth in the Estuary.



**11 Stratford, Newham**  
An area of London that has transformed in the past decade, with new developments, including Queen Elizabeth Olympic Park and East Village and major schemes along the high street such as Strand East (1,200 new homes, 58,000 sqm of workspaces, and a 350 room hotel), the University of East London and Birkbeck at University Square (8,600 sqm), the redevelopment of the Carpenters Estate (3,000 new homes and 20,000sqm of commercial space) and Stratford Island sites (1,500 new homes).

Time from the airport:  
14 mins (DLR)  
36 mins (bus)



**12 MSG Sphere**  
In March 2019, plans were submitted for a multi-use entertainment building in East London that will contain restaurants, shops, a nightclub and a 21,500-capacity venue for music, arts and entertainment events. If consented, the venue will be the largest concert arena in the UK, will create 4,300 jobs during construction, and then generate £2.7bn over 20 years, supporting 3,200 jobs annually.

Time from the airport:  
14 mins (DLR)  
36 mins (bus)

# 2.3 Demand for aviation

## Sustained demand for domestic and EU travel

**355 million**  
**UK passengers**  
**by 2030**

**420 million**  
**UK passengers**  
**by 2040**

DfT forecasts for London airports



The Government continues to express confidence in the aviation sector and its important role in supporting economic recovery.<sup>30</sup> This master plan draws on the approach used by DfT<sup>31</sup> to produce specific forecasts for growth at the airport, taking into account the latest economic projections, specifically for London and East London. These forecasts present a reasonable range of demand scenarios of how the airport is expected to reach 11 mppa over the master plan period. The master plan then sets out the potential development opportunities that might be necessary to meet these different potential demand profiles. Although there is a degree of uncertainty regarding when and how demand evolves beyond current permitted levels, we believe the range of development options presented in this master plan remain appropriate and realistic to enable the airport to adapt to meet passenger demand of up to 11 mppa by the mid to late 2030s.

As befits a major global city, the economy of London is very diverse. Estimates from the Office of National Statistics (ONS) show that the professional services, real estate, scientific and technical sectors make up the largest component of employment in the city<sup>32</sup> but are followed by sectors such as administrative and support services, information and communication, and finance and insurance. The Mayor's economic plan points to target growth sectors as including financial and business services, manufacturing, life sciences and the technology and digital sector<sup>33</sup>. These sectors are among the largest generators of air travel demand to and from London and will underpin continued growth in air travel due to their global nature.

Tourism also plays a major role in the London economy, being one of the most visited cities globally. The sector is again recognised by the Mayor's economic plan as a key sector for growth, with the tourism strategy aimed at increasing visitor numbers by almost 30% by 2025. However, this will only be achievable over the long term, if potential capacity at airports is fully utilised.

Given its position at the heart of London, growth at London City Airport could make a significant contribution to alleviating some of these constraints and supporting business and tourism across the Capital and in East London.



### Domestic connectivity

London City Airport plays an important role in supporting domestic air connectivity to London and the UK regions, handling more than 1 million domestic passengers in 2019. This represents around 20% of all passengers using the airport, a higher proportion than seen at any other London airport. Of our domestic passengers, 97% originate in or are destined for London, with the proportion making onward connections currently only 3%. This highlights the role the airport has in supporting direct routes between London and the UK regions.

In this respect, the airport plays a crucial role, offering high quality links to domestic points where road and rail alternatives are likely to be significantly slower and impractical. For business passengers, services to Edinburgh and Belfast serve the financial services sector, while Glasgow provides a key link for media and creative industries as well as manufacturing. The high frequency of services is attractive to inbound tourists from across the UK to London, as well as serving the needs of the population around the airport, providing easy access to visit friends and relatives.

The airport also provides high quality links to the Crown Dependencies of Jersey and the Isle of Man, contributing to the economic vitality of these islands. Around 100,000 domestic

passengers flew on services to the Channel Islands and Isle of Man in 2019.

Over time, domestic passenger numbers are expected to continue to increase as the airport grows. We have introduced new services to Dundee and Teeside earlier this year and expect to add more domestic services in future. We estimate that demand for domestic air travel could reach around 3 million passengers per annum (over 25% of all passengers) over the master plan period.

**1.1 million domestic passengers today, forecast to reach 3 million**



### European connectivity

Our network extends to provide connectivity to some of the most important business centres across Europe. High frequencies of service and attractive flight times make these links critical to supporting efficient business in London, increasing the ease and attractiveness of doing business with companies in the City.

In 2019 the airport continued to provide good connections across the globe through major hubs such as Amsterdam, Dublin and Frankfurt, while new services were also launched to smaller hub airports with major EU flag carriers. High service frequencies to these points minimises the connection times between flights and better supports business efficiency and leisure passenger convenience.

Many of the European destinations also generate high levels of inbound tourism and support the local population's demand for leisure travel.

In 2019, over 4 million passengers flew between London City Airport and Europe, and it is expected that demand will increase to around 8 million passengers a year over the master plan period.

**Forecast demand of up to 8 million passengers between London City Airport and Europe**



# 2.4 Aviation infrastructure and operations

## London's air travel market

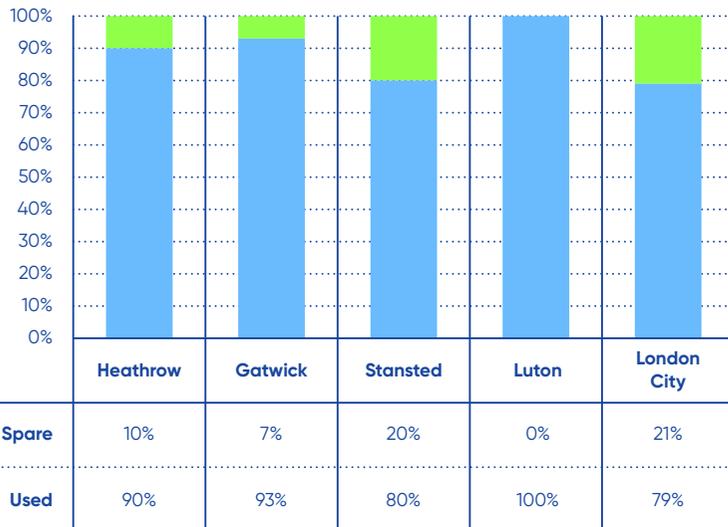


Figure 2.3: Proportion of Airport Capacity Utilised in 2019

The London air travel market is served by five main airports: London City Airport; London Heathrow; London Gatwick; London Luton and London Stansted. In 2019 before the onset of the COVID-19 pandemic here was little spare capacity at peak times across these airports. The Airports National Policy Statement<sup>34</sup> indicated that the whole London airport system was expected to be full by the mid-2030s if additional capacity was not provided.

In common with the other London airports, London City Airport has been considering how best to meet demand within its catchment area and play its part in providing the airport capacity needed to serve London as a whole. London Heathrow has plans for a third runway, but this is now unlikely to be delivered before the mid-2030s, London Gatwick has published a master plan and has signalled that it will apply to use its standby runway to deliver capacity for 74 million passengers per annum by the mid-2030s. London Luton has confirmed its intent to grow to 32 million passengers per annum by the late 2030s and London Stansted plans to expand to 43 million passengers per annum. All of these developments are subject to the grant of planning permission.

Being located in London means London City Airport is significantly better positioned to meet the needs of business and leisure passengers in our unique and growing local market and with easy access to a safe, efficient and sustainable public transport network. In 2019, London City Airport accounted for around 2.8% of all passengers using London's airports but plays a particularly important role in meeting demand to and from the City of London and within its local catchment area irrespective of the plans of the other airports to meet demand in other parts of London.

On this basis, London City Airport expects its annual passenger limit of 6.5 million to be reached in the short term, with fewer aircraft movements than expected. This growth is in part a reflection of the opportunities offered by new generation aircraft (that are already starting to be used) and the increasing base of demand in the airport's local catchment area and London generally. If we are to respond to the significant demand from both business and leisure passengers, the current limits will need to be changed.

Our master plan takes account of planned expansion elsewhere and seeks to ensure that we can continue to meet the needs of passengers, by making best use of our existing runway. This will allow us to make a modest but vital contribution to the London aviation market alongside proposals for other larger aviation projects in the South East.

# 2.5 Airspace modernisation

## Government-led process to improve UK airspace



Michael Tomas

The UK's airspace is an essential part of our national transport infrastructure. However, it is currently outdated and struggling to keep pace with growing demand, resulting in delays, unnecessary carbon emissions and flight paths that are not optimised to minimise noise. The Government has therefore made airspace modernisation a priority with the objective to deliver quicker, quieter and cleaner journeys with more capacity for the benefit of both passengers and communities. London City Airport is one of 15 airports that are part of the Government-led airspace modernisation programme.

The Civil Aviation Authority (CAA), the national supervisory authority for the planning and regulation of national airspace, has a responsibility to ensure that UK airspace is developed to meet demand and avoid the need for National Air Traffic Services (NATS) to impose regular restrictions due to insufficient capacity.

The first step in this process occurred in 2016 when London City Airport undertook an airspace change to introduce modern navigation technology (RNAV1) along our flight paths. This upgrade was mandated by the CAA and was implemented to improve the operational efficiency and safety of the airspace, minimise future delay and improve environmental performance. The changes resulted in 1.2 million people no longer being regularly overflown below 7,000ft, arrivals staying over the sea for longer and in a narrower path over land as well as departures climbing high more quickly.

NATS are now developing airspace change proposals to modernise the airspace structure and route network above 7,000ft. All airports in the South East are key consultees in this process and are required to review arrival and departure routes to determine how best to connect with these high-altitude network changes. We are committed to working with NATS and all London airports to facilitate an integrated approach.

During summer 2019 the airport engaged with stakeholders to develop design principles under Stage 1 of the process. This is in line with the CAA's guidance on airspace design (CAP1616). This engagement included local councils, the GLA, relevant communities, business groups and our Consultative Committee. Initial feedback from some community members suggested that respite routes should be introduced as part of this programme, and this will be fully considered as design options are developed. Full details of the engagement to date have been published on our website.

The CAA's guidance, outlines the next stages of the process, including the development and analysis of design options which will be subject to full public consultation in due course. Information on the next stages and timelines will be available on the CAA portal<sup>35</sup>. Whilst the programme was put on hold across the UK in summer 2020 due to the COVID-19 pandemic, we continue to work with the Airspace Change Organising Group, NATS and other airports to coordinate a restart.

Whilst the processes to achieve airspace modernisation and the future development of the airport are not directly related, the environmental impacts and benefits of such changes are closely interlinked. The airport will continue to be open and transparent to keep stakeholders fully informed, and to ensure we continue to operate safely, whilst also reducing carbon emissions and mitigating the impacts of our operations as far as possible.

# 2.6 Policy

## Making best use of the existing runway and addressing environmental issues

The UK's future prosperity  
depends on our ability to reach  
out to the rest of the world

Aviation 2050: the future of aviation

The master plan has been informed by national, regional and local planning and policy frameworks.

### National

The Government's 2013 Aviation Policy Framework includes the following key themes:

- *Making Best Use* – which requires the best use of existing airport runways, thereby lending support to the more intensive use of existing infrastructure.
- *Limiting Environmental Impacts* – seeking to “limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise” with noise envelopes and respite seen as important means of mitigating noise.

The Department for Transport (DfT) is in the process of updating its Aviation Strategy. As part of this process the Government confirmed that their policy supports all airports in making best use of their existing runways, subject to there being a balance of benefits over environmental costs<sup>36</sup>. In December 2018 the department published for consultation its Green Paper on the Aviation Strategy, '*Aviation 2050: the future of UK aviation*', which stressed the importance of aviation in these changing times: “As we leave the European Union, the UK's future prosperity depends on our ability to reach out to the rest of the world, to forge new trade links, to connect and compete.”

The draft Aviation Strategy predicts significant growth in the number of passengers using UK Airports from 284 million in 2017 to 444 million by 2050 based on the expected capacity available. The ability to meet this level of demand requires all airports to make best use of their existing runways, alongside the provision of a third runway at London Heathrow. Even then, there will still be an element of unmet demand across the UK. The draft Strategy expects airports to achieve this by:

- demonstrating that future growth is compatible with the UK's climate change commitments, with a requirement on airports to provide air quality plans to manage emissions;
- providing innovative solutions and incentives for journeys to airports in order to help to reduce carbon, congestion and improve air quality;
- meeting objective noise limits and setting noise caps on future growth in order to provide certainty and strike a fair balance between the industry and communities; and
- lowering the current noise insulation policy threshold beyond the current 63dB LAeq 16hr contour to 60dB LAeq 16hr, seeking consistency in the specification for noise insulation schemes across airports and reviewing the effectiveness of existing schemes.

**“Our airports are national assets and their expansion is a core part of boosting our global connectivity. Under our ‘making best use’ policy, airports [have] ambitious proposals to invest in their infrastructure.”**

Grant Shapps MP, 27 February 2020

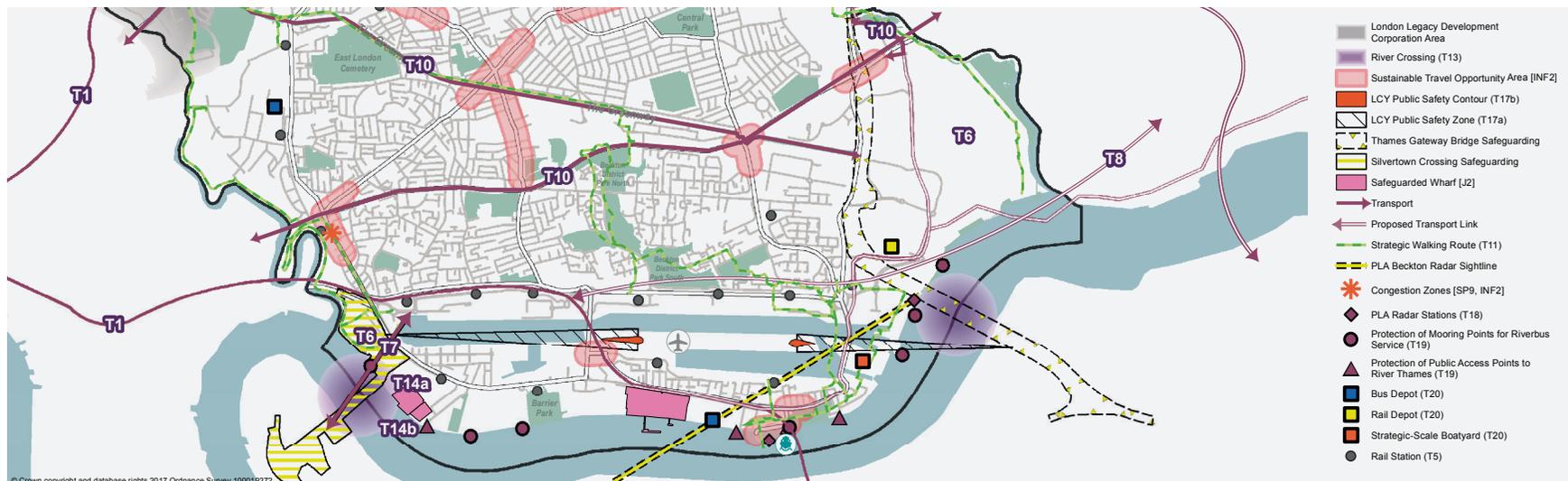
Other important aspects of the Green Paper include, enhancing the passenger experience, making airports more accessible to all, improving safety, encouraging innovation and new technology and ensuring that the aviation industry is subject to challenging targets for tackling emissions.

In June 2019 the Government legislated for the UK to be zero carbon by 2050<sup>37</sup>, amending the 2008 Climate Change Act and publishing the Climate Change Act 2008 (2050 Target Amendment) Order 2019. If any aviation specific carbon budgets or related initiatives are included in any future Government policy, these will also be reviewed by the airport and incorporated into our own carbon management plans as relevant.

In publishing this master plan, we have fully considered the Government’s net zero carbon obligations in Section 1(1) of the Climate Change Act, which enshrines the Paris Agreement into law. We also acknowledge that Heathrow Airport’s expansion plans have been called into question, following the Court of Appeal ruling on the Government’s Airports National Policy Statement (ANPS). This ruling has been appealed by Heathrow Airport and the outcome is still awaited. However, the ANPS is specific to growth at Heathrow Airport and is not directly relevant to the future growth of London City Airport.

On 27 February 2020, following the Court of Appeal’s judgment, the Secretary of State for Transport reaffirmed that ‘making best use’ remains government policy for airports and that aviation policy will be taken forward in parallel with the Government’s climate change commitments.

Figure 2.4: Newham Local Plan proposals map



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## London

The Mayor of London has the responsibility for strategic planning in the capital. In December 2017, the Mayor published his draft replacement London Plan which is timetabled for adoption at some point in 2021. Within this document, the Mayor supports the case for additional aviation capacity in the south east of England, providing it meets London's passenger and freight needs. The draft plan, and indeed the Mayor's response to the draft master plan consultation, makes it clear that support for additional capacity is dependent on setting out how we and the industry can meet our environmental commitments in respect of noise, air quality and climate change, while also contributing to a significant increase in the numbers of new jobs and homes.

London City Airport sits within the Royal Docks/Beckton Riverside Opportunity Area. These areas are earmarked as having significant development capacity to accommodate new housing, commercial development and infrastructure of all types. The Royal Docks/Beckton Riverside Opportunity Area is identified in the draft replacement London Plan as potentially delivering 30,000 homes and 41,500 jobs and is expected to become a vibrant new London quarter creating a world class business, industrial, cultural and residential district.

The future growth of the airport, subject to meeting its environmental commitments, will complement this and give Londoners more choice and improved connectivity.

## Newham

Adopted in December 2018, the London Borough of Newham's Local Plan states that the airport will continue to perform an important role in the area's international business and visitor connectivity and as the focus to an employment hub, with measures implemented to support the optimisation of existing capacity and further mitigation of its environmental impacts, including improvements to public and sustainable transport.

The plan (at paragraph 5.37) recognises that London City Airport is a major employer and a catalyst for investment within the area, supporting London's international role.

The airport is identified as an employment hub with a focus on the visitor economy, business and logistics (policy J1) with adjacent land identified as a Local Industrial Location. There is support for measures that improve investment and regeneration into Newham and help achieve modal shift to sustainable transport, such as a new Crossrail station (Policy INF1) as well as operational safeguarding and public safety zone restrictions. Figure 2.4 (Figure 6.1 of the Local Plan) shows the borough wide transport map including the location of airport public safety zones and planned and safeguarded transport improvements.

In 2019, in conjunction with many other local authorities in London and elsewhere, Newham declared a climate emergency and has committed to becoming carbon neutral by 2030 and net zero carbon by 2050. Building on that the Council also published a Climate Emergency Action Plan this year setting out its short term targets. The Council is to publish annual reports on progress in reaching the carbon neutral target. We support the intent of the declaration and action plan and will work with the London Borough of Newham to help achieve its objectives of reducing carbon emissions throughout the borough. The airport has itself achieved accreditation for carbon neutrality for airport operations from the international Airports Carbon Accreditation Scheme in 2019, in recognition of our work in reducing and offsetting CO<sub>2</sub> emissions under our control (excludes airlines).

In November 2019, Newham also published a new Air Quality Action Plan (2019-2024). Section 1 of the Action Plan sets out a summary of current air quality conditions, and includes a section related to London City Airport (P15). Section 2 of the Action Plan identifies 10 air quality priorities within seven broad topic areas. In line with this London City Airport will work to ensure its future growth and operations are consistent with the Council's priorities.



# 3 A new master plan

This section explains why we are updating our 2006 master plan and then sets out our forecasts for both passengers and aircraft movements. It summarises the benefits of using more of the quieter, cleaner, new generation aircraft as we grow to meet demand and identifies our priorities for growth.

### **3.1**

## **A new master plan**

### **3.2**

## **Demand forecasts**

### **3.3**

## **Route development**

### **3.4**

## **New generation aircraft**

### **3.5**

## **Innovation and technology**

# 3.1 A new master plan

## Why we have updated our master plan

Our 2006 master plan identified how the airport could respond to forecast growth up to 2030. It identified plans to meet this growth in demand that are consistent with our current development plans, but it is now appropriate to update the master plan given the passage of time, expectations of demand growth to support economic recovery and changes in the aviation industry, Government policy and legislation.

This master plan provides a framework for how we can respond to demand in a sustainable and responsible way, taking into account feedback from our local community and stakeholders on the draft master plan. Its purpose is to inform the local community and stakeholders about potential future development and inform planning authorities to help them to prepare local and strategic

planning documents. In line with Government guidance and industry practice, the master plan does not include the level of detail that would generally be included in planning applications for airport related development, instead it includes a high level vision for potential growth and a provisional assessment of environmental matters and mitigation.

This master plan follows guidance in the Government's Aviation Policy Framework, which requires master plans to address the following 'core' areas:

- Forecasts;
- Infrastructure proposals;
- Safeguarding and land/property take;
- Impact on people and the natural environment; and
- Proposals to minimise and mitigate impacts.



# 3.2 Demand forecasts Up to 11 million passengers annually



The 2006 master plan forecast around 5 million passengers by 2020. This forecast was broadly accurate as we reached that level of growth just one year earlier, in 2019.

The 2006 master plan also forecast reaching eight million passengers annually by 2030, accommodated on 171,000 aircraft movements, including 27,600 business aircraft movements.

Having updated our forecasts as part of this master plan, we expect passenger demand to use London City Airport to increase to 11 million passengers annually, accommodated by around 151,000 air transport movements, including 5,000 business aircraft movements. This long term forecast is likely to be realised by the mid to late 2030s and could see our share of expected passengers across the London airports increase from around 2.8% to around 4.3%, dependent on how capacity develops at these other airports over time. These projections are based on long term trends in the aviation industry and in the economy and the rate of growth is likely to vary throughout the master plan period, reflecting economic factors and industry developments.

Since the forecasts used to underpin the CADP infrastructure (currently under construction) were produced in 2015, we have seen more passengers travel on fewer aircraft movements primarily because airlines have re-equipped with jet aircraft with more seats quicker than previously expected, and are filling a higher proportion of seats on each flight than seen historically. This has enabled the airport to serve a broader range of passengers and destinations, including more leisure flights, as well as reducing carbon emissions per passenger.

Our updated projections take as their start point the Department for Transport's 2017 UK Aviation Forecasts. These have been updated and adjusted to reflect changes in the economic growth projections, taking into account the anticipated medium to long term economic effects of the UK leaving the European Union in January 2020 and from the COVID-19 related recession. Our latest projections are a central estimate recognising there is also likely to be variability in the rate of growth during the master plan period taking into account economic growth cycles and other factors. These forecasts will be kept under review but based on current knowledge, confirm that 11 mppa is a realistic attainable throughput at London City Airport over the period to the mid to late 2030s.

## Historic and forecast passenger demand

■ Historic passengers (millions)  
■ Future passengers (millions)

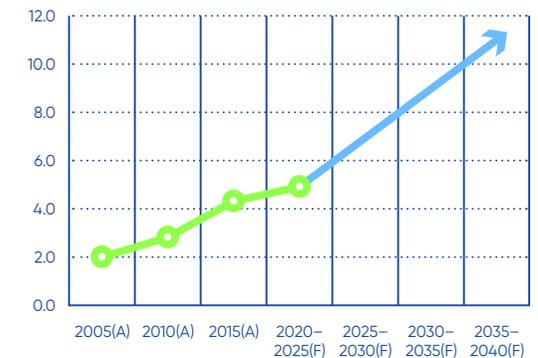


Figure 3.1: London City Airport demand forecasts  
Source: York Aviation

### London City Airport share of estimated total of London's passengers

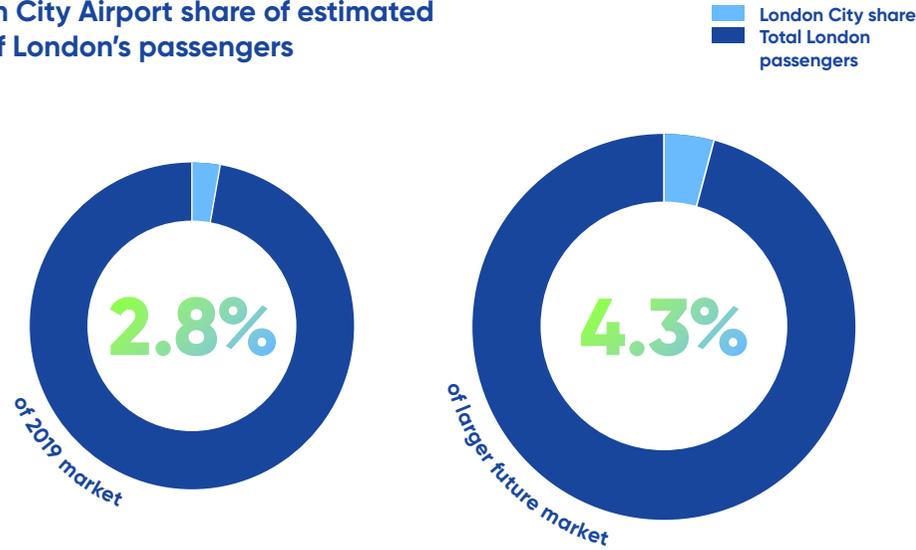


Figure 3.2  
Source: York Aviation



Based on these updated projections, the changing nature of the demand at our airport is expected to see a continuation of the increased number of leisure passengers over time, both inbound and outbound. At 11 mppa, we expect business passengers to represent around 36% of all demand increasing to almost 4 million annually (compared to around 45% in 2019), still a higher proportion than seen at any other London airport, reflecting our ongoing role in supporting the economic prosperity of London. Alongside this, over time we expect to see increased use by tourists visiting London and Britain, and by other passengers looking to connect to global destinations via our daily services to major European hubs.

The expected increase in leisure flying over time will be an important consideration for airlines as they seek to replace their existing fleets with new generation aircraft types. An increased number of leisure passengers would allow more seats to be filled on these aircraft in off-peak times, helping create the business case for investment in more environmentally efficient aircraft. The broader mix of passengers will also support a wider range of destinations and allow airlines to optimise their services, focusing on key business routes at peak times of the week and offering leisure connections to benefit the local population and inbound tourism in off-peak periods.

We also predict that there will be an increase in the proportion of movements undertaken by jet aircraft and a significant proportion will be cleaner, quieter, new generation aircraft which can be accommodated within our noise contour area limit. Subject to re-fleeting decisions by airlines, it is projected that between 75-80% of the passenger jet fleet will be newer variants. It is expected that turboprop aircraft will continue to operate at the airport throughout the forecast period albeit their use will likely reduce over time.

It is important to note that, while the forecasts set out in this master plan reflect our overall expectations as to the trajectory and speed of passenger growth, they are intended to be read flexibly to allow the master plan to accommodate potential changes in demand, taking into account developments in the economy, at other airports and the commercial realities of how airlines seek to respond to that demand, particularly in terms of fleet mix. The forecasts set out in the master plan are indicative of the expected growth trajectory, but this will be refined over time should any detailed proposals be brought forward.

# 3.3 Route development

## Growing destinations to new markets for both business and leisure

Our route network has diversified over recent years and in 2019 the airport served a total of 45 destinations across the UK and Europe. Many of these destinations were served throughout the year and were supplemented by leisure orientated routes on a seasonal basis.

Our route development strategy aims to ensure that we deliver even better connectivity both for and to London and East London. Our role will only become more important as Heathrow strengthens its global hub role with an increasing focus on delivering the Government's target for global connectivity to emerging markets both before and after the opening of its proposed third runway. Maintaining and enhancing connectivity domestically and to European markets will be just as important.

We expect to remain focused on city destinations which support the business community, but which also play a vital role in offering services for inbound tourism and support the air travel needs of the increasing number of residents and businesses in East London.

Better connecting and levelling up the United Kingdom is a focus of Government. We play a key role in providing quick, efficient and cost-effective access to the capital city for regional businesses. Additionally, the airport is well placed to improve connectivity for the growing domestic tourism industry as well as providing convenient air access for the expanding business and population base in the eastern part of the capital.

### Current airlines and alliances

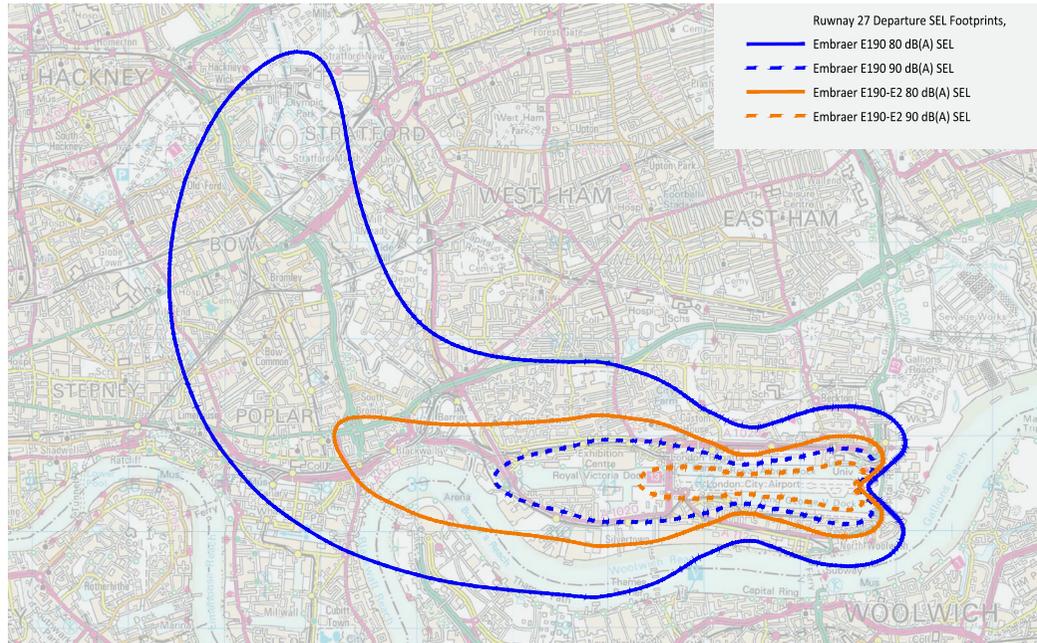




# 3.4 New generation aircraft

## Quieter, cleaner and more fuel efficient

Figure 3.4: Departure noise contour comparison for Embraer E190 versus E190-E2



In recent years there has been an emergence of new generation aircraft, which offer improved operational performance and reduced impacts. These aircraft, such as the Embraer E2 Jets and Airbus A220-100 (previously Bombardier CS100), are highly efficient in terms of engine power plant performance and fuel consumption. Importantly, they are quieter than their predecessors, offer improved passenger experience and open up new destinations by flying a longer range. The first new generation aircraft (A220-100) started operations at the airport with Swiss Air Lines in 2017, and the expectation is that Embraer E190-E2 and/or E195-E2 aircraft could be certified to operate at the airport in the coming years.

E190-E2 had the lowest noise levels among all new generation single aisle aircraft and offers a significant improvement compared to the current Embraer E-jets and other aircraft types. These new generation aircraft are up to 17% more fuel efficient than current models and, coupled with more seats, this means carbon emissions per passenger mile flown are lower than with existing and previous generation aircraft.

Figure 3.4 shows an indicative noise contour<sup>38</sup> for a departure by a current E190 aircraft shown in blue and a new generation E190-E2<sup>39</sup> shown in orange. The noise contours for the new generation Embraer E190-E2 are less than a third of the area of those for the Embraer E190, showing the large expected improvement in departure noise levels.

In European Union Aviation Safety Agency (EASA) certification testing to date, the



# Industry progress in new technologies



\* Existing carriers are evaluating the use of the E190-E2 following test flight in July 2018

† No certification work undertaken to date, but the manufacturer is confident it is viable for London City Airport

‡ No certification work undertaken to date

¶ No certification work undertaken to date. A320neo may be feasible for London City

Sources: IATA; Sustainable, Aviation, UK Aviation Strategy 2050, London City Airport data

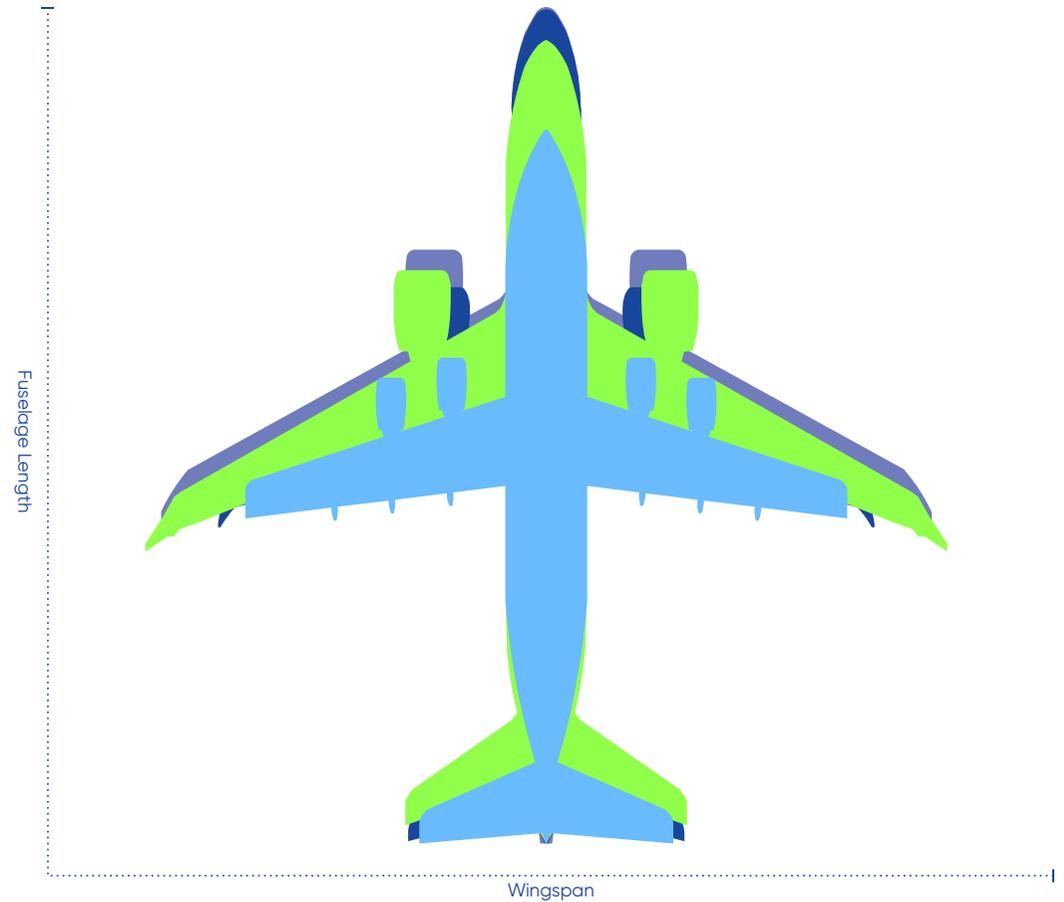
## Innovation in aircraft will go hand in hand with London City Airport's future growth

While the future is unpredictable, the aviation industry has set out ambitious research and development programmes that will enable the industry to meet its objectives on sustainable growth, while meeting passenger needs. We anticipate that passengers will continue to want more flexibility, convenience and connectivity in their travel choices in the future, supported by personalised real-time information, surface transport options and faster passage through airports.

By embracing technology, a significant contribution to emissions reduction can be achieved. The share of aircraft equipped with the most modern fuel-efficient technologies is constantly growing and there is notable progress in the development of commercially available sustainable aviation fuels. Each new generation of aircraft yields a typical

17% fuel efficiency improvement. Innovation in aircraft will go hand in hand with London City Airport's future growth, benefitting in the short-term from the Airbus A220-100 and Embraer E190-E2. The rate of progress in this sector means that feasibly the airport could be operating battery-powered aircraft towards the mid-century.

However, there are some challenges for our infrastructure to accommodate these new aircraft, as their wingspan tends to be wider than the aircraft they replace as demonstrated in Figure 3.5.



Aircraft	Passenger Capacity	Wingspan	Fuselage Length
Avro RJ-100	97–112	26.2m	30.99m
Airbus A220-100	116–135	35.1m	34.9m
Embraer 190	96–114	28.72m	36.24m
Embraer 190-E2	96–114	33.72m	36.33m

Figure 3.5: Aircraft size comparison between old and new generation aircraft



Several of our airlines are expected to phase out the older generation aircraft such as the Avro RJ and Embraer E1 E-jets in the coming years and replace them with new generation aircraft. In order to achieve the performance and efficiency enhancements these aircraft have been designed with wider wingspans and some have higher seating capacities too. This presents an opportunity to increase the number of passengers that our airport can serve with the same number of aircraft movements.

However, the introduction of more aircraft with wider wingspans may require further modifications to our airfield beyond delivery of CADP and we have shown how these may be delivered in Section 4 to realise the operational and environmental benefits of these aircraft.

In addition to the increased numbers of new generation aircraft, the aviation industry is committed to becoming more sustainable and reducing carbon emissions by continuing to innovate. Sustainable aviation fuels (SAF) have the potential to make a significant contribution to mitigating the current and expected future environmental impacts of aviation. Government has an opportunity to accelerate the benefits of SAF through increasing research and development support and a scaling up of commercial SAF production. Sustainable fuels are now being successfully used on flights using blends of bio-based aviation fuels. A number of airlines have committed to developing their own SAF supply, including British Airways, who submitted plans to develop the UK and Europe's first commercial waste to jet fuel plant in 2019.

Elsewhere, technology is emerging and it is anticipated that hybrid and electric aircraft will have the capability to fly up to 1,000 miles within the next 10 - 15 years and potentially become compatible with our domestic and short haul European network in the longer term. We will continue to work with manufacturers and airlines on supporting this important development over the duration of the master plan and beyond as we strive to become net zero carbon by 2050.

# 3.5 Innovation and technology

## Cutting edge solutions



To maximise our potential and deliver an outstanding passenger experience, throughout our history, we have sought to embrace innovation and technology.

For example, working with companies like CrowdVision has enabled us to directly measure how quickly passengers are moving through the airport, helping us to deliver our 20-minute train to plane proposition.

Looking to the future, our airport will embrace change in order to continue to operate with the highest safety standards, to meet passenger expectations and to ensure we continue to offer a unique service.



New digital air traffic control tower



### Embracing innovation

- **Passportless travel:** working with airlines, UK Border Force (UKBF) and security agencies, our ambition is to deploy the latest biometric technology;
- **UK border:** work with partners, including UKBF to deliver a frictionless border upon arrival at London City Airport;
- **Security:** deploy the latest range of CT scanners that will further improve screening as well as make the experience quicker and slicker;
- **Digital air traffic control tower:** maximise the potential of all latest technologies so that it can further enhance perimeter and airspace security and avoid operational disruption;
- **Train to plane:** investigate direct links from the DLR direct to airport security for passengers travelling without luggage to check-in to improve passenger experience and speed – encouraging modal shift to use public and other sustainable transport modes to and from the airport; and
- **Sustainability:** working with industry partners to embrace the emerging biofuels, hybrid and electric agendas.

# 4 Vision for growth

This section describes the key operational and infrastructure changes to accommodate future demand.

The significant employment and economic benefits of providing capacity for 11 million passengers are also presented alongside the potential future improvements in how people get to and from the airport.

## **4.1 Growth and modernisation**

## **4.2 Adapting our infrastructure**

## **4.3 Adjusting current operations**

## **4.4 Creating new jobs and opportunities**

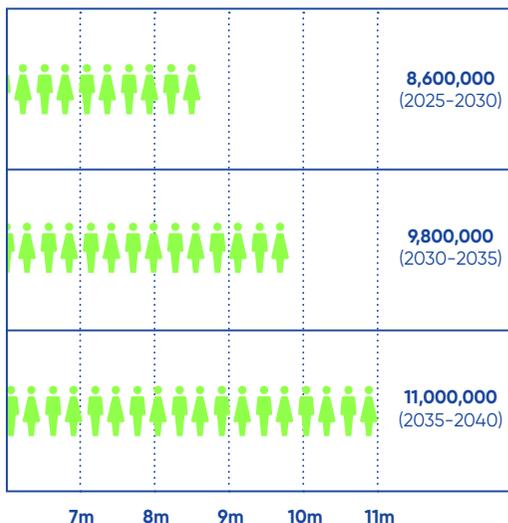
## **4.5 Contributing to wider economic growth**

## **4.6 Improving sustainable transport to and from the airport**

# 4.1 Growth and modernisation

## Responding to aviation demand

Annual passengers



Annual aircraft movements

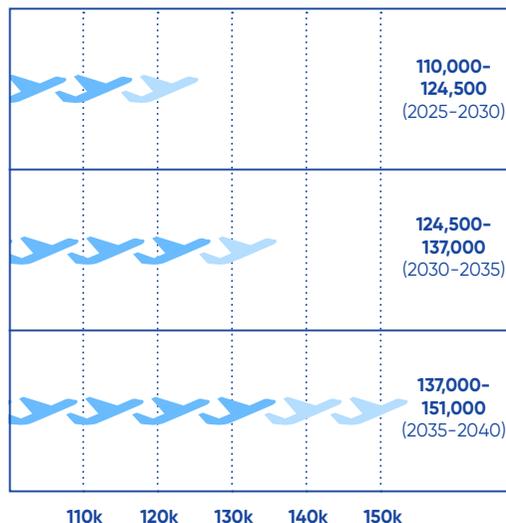
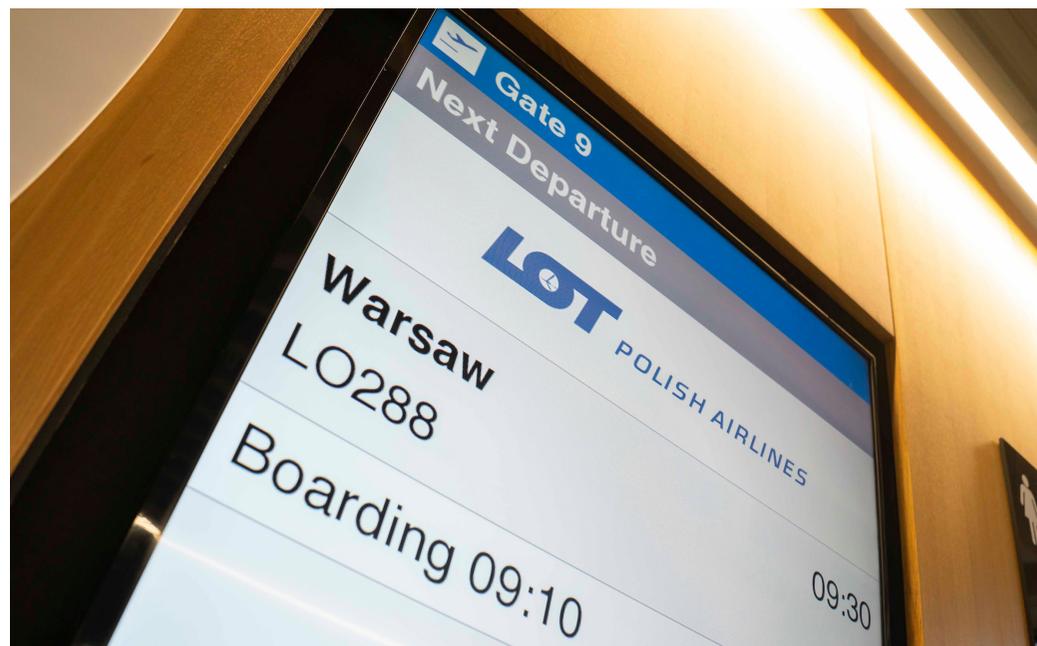


Figure 4.1: Indicative demand forecasts at 5 yearly ranges  
Source: York Aviation

We forecast that passenger demand will increase to around 11 million annually. Depending on the speed of uptake in new generation aircraft, this could generate between 137,000 and 151,000 aircraft movements annually (including 5,000 business jet movements).

An uplift in the currently permitted passenger limits would enable London City Airport to meet the significant forecast demand from both business and leisure passengers, which would be a welcome boost to the wider London economy at a time when other London airports will also be constrained. The more modern and larger aircraft now being operated as well as the forecast increase in new generation aircraft make it likely that we will reach our 6.5 million annual

passenger limit before our 111,000 annual ATM limit. However, the aviation industry is dynamic and ever changing and this master plan recognises that growth is likely to come forward incrementally over time, requiring changes to current planning controls and/or the provision of new infrastructure and passenger facilities. Figure 4.1 shows how this growth might materialise over time.



# 4.2 Adapting our infrastructure

## Making best use of our existing runway

Our plans have been developed to ensure that an operationally efficient and flexible airport layout is delivered. They also seek to meet future demand and maximise benefits while minimising the extent of new infrastructure and environmental impacts. To achieve this, we will seek to make best use of our existing runway and land within the existing airport boundary and undertake future development in a balanced manner to reduce where possible the extent of development outside of our current land ownership. Some limited future development may be required over King George V (KGV) Dock depending on airlines' fleet plans in the future.

The ultimate infrastructure requirements and potential airport layout to meet demand of 11 million passengers per year is outlined below, as well as a brief description of how the airport infrastructure could be adapted to accommodate future growth. As explained, growth is expected to take place incrementally over time in response to demand. Potential phasing plans to deliver incremental growth over the master plan period are included at Appendix A.2.



# Our development plans seek to meet future demand and maximise benefits while minimising the extent of new infrastructure and environmental impacts

## Runway

It is not proposed to build a new runway or to extend the length of our existing runway. Our aim is to maximise the potential of the existing runway infrastructure, consistent with Government aviation policy.

## Taxiways

The new CADP parallel taxiway to the east of the existing apron will reduce the time needed for aircraft to occupy the runway and remove the need for aircraft to taxi along or 'back-track' along the runway, therefore improving safety and efficiency. This new infrastructure allows up to 45 air transport movements per hour to use the runway at peak times.



To respond to the demand of up to 151,000 air transport movements each year and accommodate more new generation aircraft, we may need to make some additional airfield upgrades in addition to CADP in due course. These may include upgrades to the western taxiway and apron, including new aircraft hold points on the west for a more balanced airfield layout and more efficient use of the runway (location 2 on Figure 4.2).

These upgrades would allow us to respond to the likely peak demand of up to 52 air transport movements per hour to cater for growth in aircraft movements

## Apron and Stands

Additional aircraft stands and/or modifications to some existing aircraft stands may be needed to meet the forecast changes in peak hour demand and provide space for new aircraft. Our approach will be to respond to demand, taking into account airline's plans to introduce more of the cleaner, quieter, new generation aircraft into their fleet.

To serve upgraded and additional aircraft parking stands, changes to the Jet Centre and pier buildings which accommodate passenger gate lounges may also be needed.

All potential changes to the aprons and stands can be accommodated within the existing airport site, apart from the stands over KGV Dock which would only require a modest development over the dock.



Some or all of the following changes could be delivered, depending on demand, phasing and the extent of re-fleeting by airlines:

- Reconfiguration of three aircraft stands 12-14 on the western apron to create two new larger Code C stands, capable of serving new generation aircraft such as the Airbus A220-100 and Embraer E190-E2 and/or E195-E2 (location 2 on Figure 4.2). This may require the relocation of the existing Fuel Farm and other support facilities to the eastern end of the airport as explained below (location 8 on Figure 4.2);
- Upgrade of some or all aircraft stands located on the existing West Pier and/or Jet Centre apron to serve new generation aircraft. Some reconfiguration may be required depending on the number and type of stands required (location 8 on Figure 4.2); and
- Up to three new Code C aircraft stands, capable of serving new generation aircraft such as the Airbus A220-100 and Embraer E190-E2 and/or E195-E2, could be added at the eastern end of the apron. These stands would need to be constructed over KGV dock as an extension of the new stands currently being delivered as part of CADP (location 7 on Figure 4.2). Some of these additional stands could be served by an extended pier (location 7 on Figure 4.2).

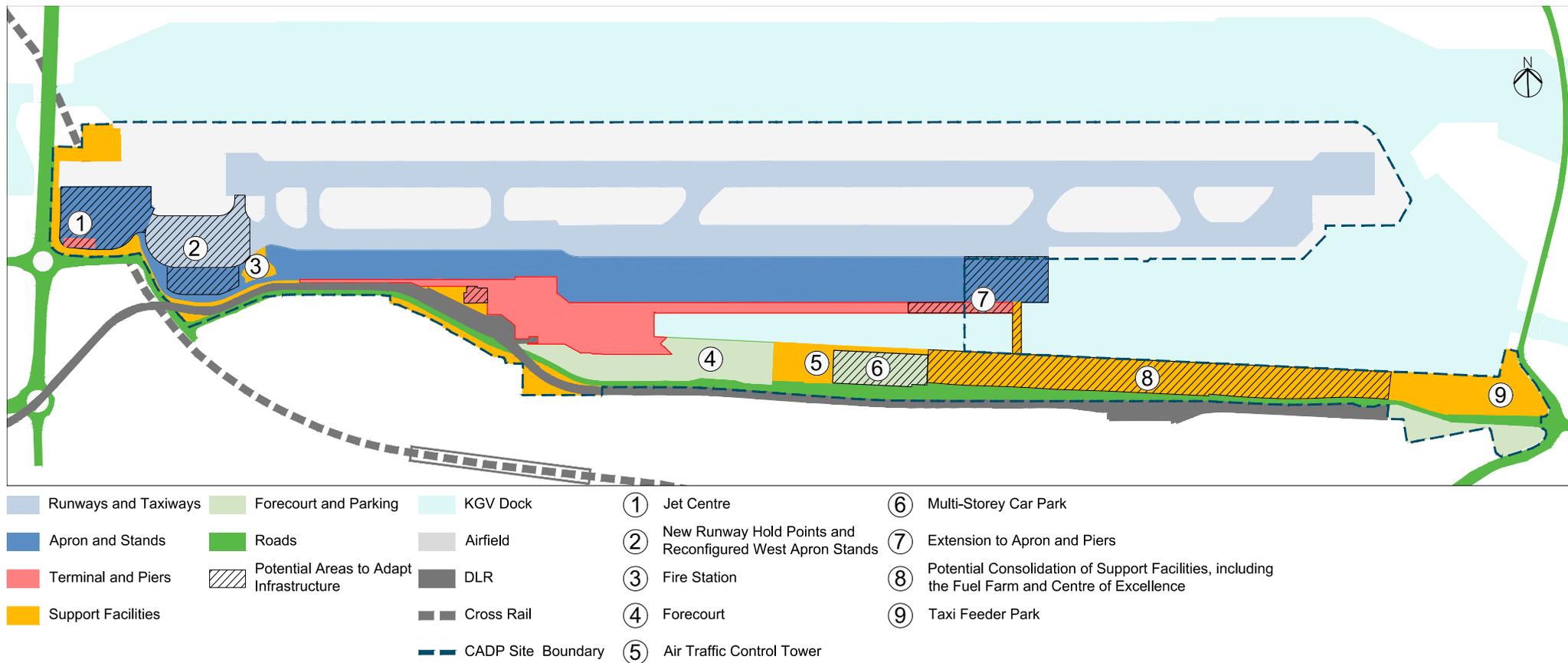


Figure 4.2: Master plan potential site land use

### Terminal

A new terminal will not be required to deliver the growth forecast in this master plan. The planned transformation and expansion of the terminal building as part of CADP will deliver efficiencies through internal re-design but may need to be further reconfigured and optimised to provide enough capacity to handle the forecast increased demand.

We expect that innovation and technological advancements in passenger and baggage processing over time will help reduce the overall need for space in certain areas of the terminal and provide opportunities for the provision of other facilities within the existing building footprint. Similarly, some 'back of house' operational facilities could be relocated elsewhere on the airport site to provide additional space if required, optimising our land use as efficiently and sustainably as possible.

Our Jet Centre at the western end of the airfield (location 1 on Figure 4.2) could continue to operate as long as there are runway slots available and commercial drivers to do so, though there is an expectation that as the number of scheduled passenger air transport movements increases the Jet Centre movements may gradually reduce, particularly at peak times. This could create an opportunity to park more new generation aircraft on the Jet Centre apron and make better use of our existing airfield infrastructure. Reduced movements at the Jet Centre could also reduce the area of the airports Public Safety Zone over time (see Section 6).

### Support facilities

Changes to the airfield, apron and stands at the western end of the airport (location 2 on Figure 4.2), in order to accommodate more new generation aircraft and the forecast demand, could require the relocation of existing support facilities, currently located to the west of the terminal, including the Fuel Farm. Relocating these facilities to the east of the terminal (location 8 on Figure 4.2) would make more efficient use of the land to the south of KGV Dock and provide space for these facilities to be more easily adapted over time in line with demand compared to the current constrained locations.

The opportunity to relocate the Fuel Farm could be created by adapting the CADP single deck car park which has been safeguarded in design for multi-storey use. This could also accommodate the current surface car parking, car rental and other car related facilities and free up more land for more direct airport related development, including airport maintenance and support facilities (location 8 on Figure 4.2) such as increased flight cargo particularly in the short term.

Land is also safeguarded by the airport to the south of KGV Dock for new commercial or employment creating opportunities beyond those directly created by typical airport operations. We would welcome partnering with our airlines or education partners to develop an onsite Aviation Centre of Excellence on the dockside lands, subject to consolidating the onsite parking into a multi-storey car park to create the space required. Specific details of this facility have not yet been finalised, but our aspirations include airline offices, training rooms and aircraft simulators (location 8 on Figure 4.2).

The terminal forecourt is expected to have capacity to accommodate the growth with only minor modifications required (location 4 on Figure 4.2). Further details on the potential improvements in getting to and from the airport are provided in Section 4.6.

# 4.3 Adjusting current operations

## Accelerating investment in new generation aircraft



Despite the forecast growth in air transport movements, we will not exceed our agreed noise contour area limit, which in line with our current planning commitments we will work to reduce over the master plan period. Our future growth will also maintain the current eight-hour night-time curfew on flights, something we heard consistently through our consultation was the importance of this to our local residents and those living under our flight paths.

To make better use of our runway and other infrastructure, we consulted on potential changes to our operations including when aircraft fly, these considerations included more flexibility:

- In the first half hour of permitted operations when there is demand for business travel including the potential to connect into early morning European hub traffic. This first half hour between 0630hrs – 0700hrs is currently limited to six movements;
- In the last half hour of permitted operations for delayed take-offs or arrivals. Movements in the last half hour between 2200hrs – 2230hrs are currently limited to 400 per year, or just more than one per day; and
- At weekends to allow us to respond to airline and customer demand for more flexible flight times. There is currently a 24-hour closure at weekends from 1230hrs on Saturday to 1230hrs on Sunday. This was introduced in 1998. There are also limits on the total number of movements that can operate at weekends.

In addition to making the best use of our runway, we believe that these areas of flexibility would further accelerate airlines' plans to invest in more new generation aircraft, which bring environmental and noise benefits.

Recognising the concerns raised by many who responded to the consultation, we will maintain the eight-hour night time flight curfew. We also have no immediate plans to seek to extend the operating hours, either during the week or at weekends, however, we will keep this under review as the airport recovers from the impact of the COVID-19 pandemic. Should any future adjustments be proposed, these would be considered and consulted upon through the planning process before a decision is taken by the relevant authority.

# 4.4 Creating new jobs and opportunities

## Investing in local opportunity



The airport is a large employer and two thirds of the people who work onsite are from the local area. In 2019, more than 2,200 people were employed at the airport across all of the companies operating there.

Looking to the future, with the airport potentially serving 11 million passengers per annum (mppa), we will need more local people working directly on site, further generating additional economic activity and employment through our supply chain and beyond. As we grow to accommodate 11 mppa, we estimate that in the order of 5,300 FTE jobs will be supported locally, with up to 4,300 people employed at the airport (3,800 FTE jobs). This would result in an additional 2,700 FTE jobs<sup>40</sup>.

This would deliver growth in direct onsite employment of over 85%, expanding employment across all sectors and requiring a wide variety of skills. Most of the jobs created directly at the airport will relate to operational activities such as aircraft handling, maintenance and engineering, freight or fuel handling. Other new job opportunities will come from retail, and from the airlines operating our flights (pilots, flight attendants, customer service, etc.) with the remainder created in contractor and concession activities.

Some of this increase in jobs is linked to passenger growth, and some to the increase in air transport movements. However, we expect the number of people working on the site to increase in increments over time rather than smoothly in line with passenger numbers, as some of the demand for resources will be met by existing workers doing more hours, for example, rather than recruiting new staff. Over the lifetime of the master plan, efficiencies will occur and some areas will have unexpected growth. The benefits will reflect these organic changes, which local people and businesses will be able to take advantage of.



### Investing in local opportunity

- Up to 2,000 new FTE jobs at the airport;
- An additional 700 new indirect and induced FTE jobs in the local area; and
- £210 million in annual economic output measured as Gross Value Added (GVA) through direct, indirect and induced employment opportunities.

## An airport of the future, supporting up to 5,300 local jobs and £210 million in annual economic output

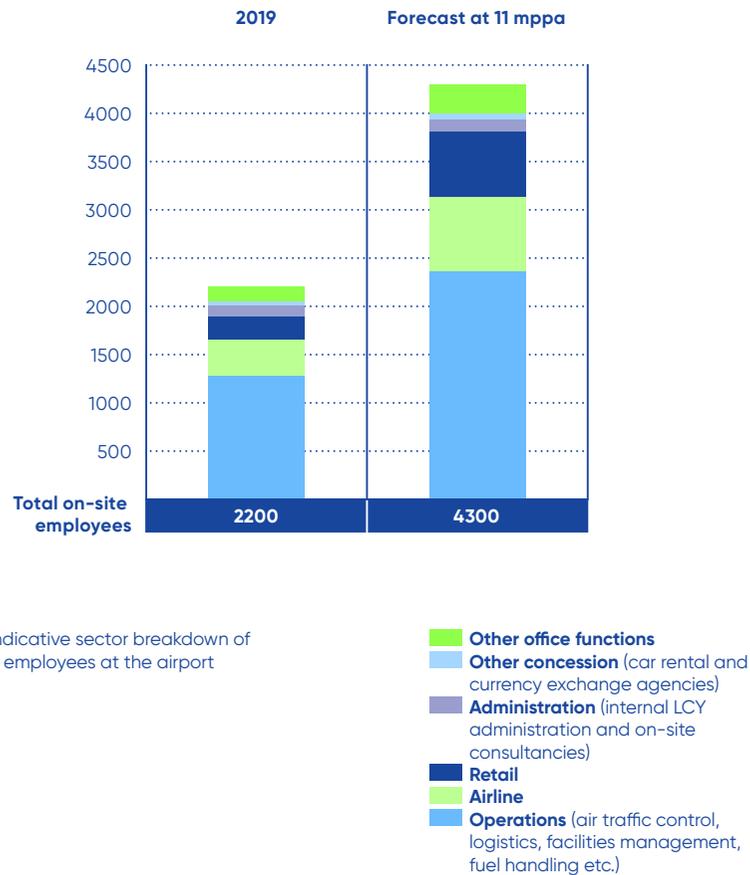
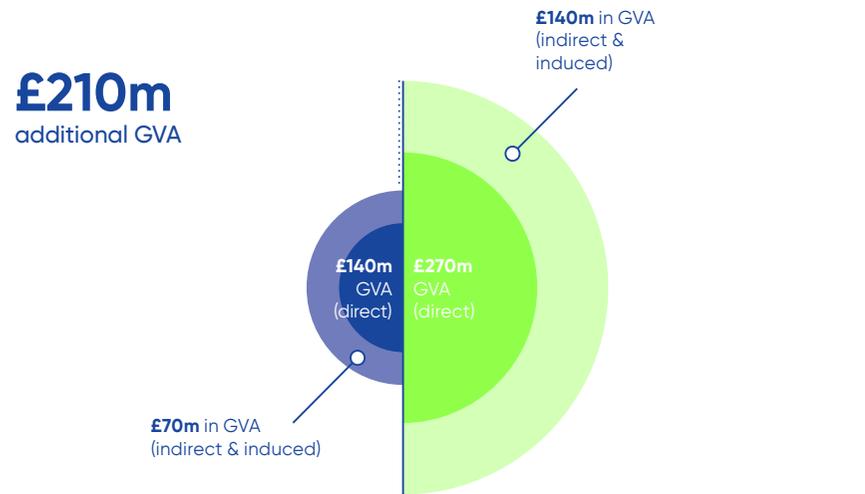
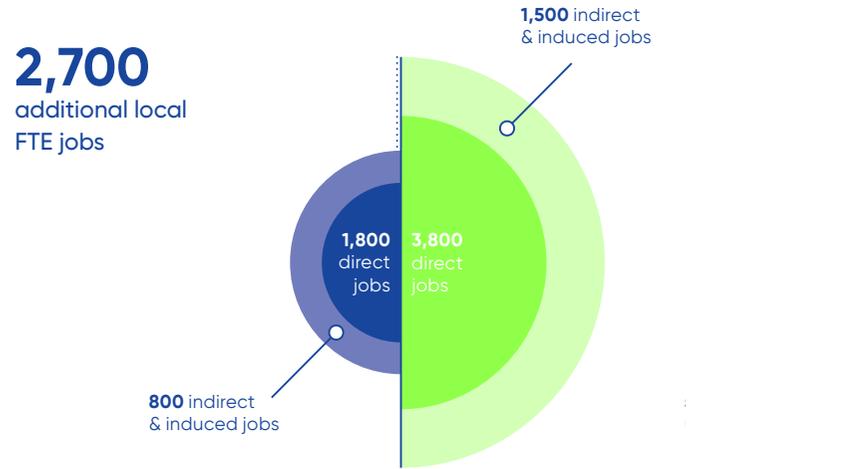


Figure 4.3: Indicative sector breakdown of total on-site employees at the airport





**Figure 4.4:** FTE and GVA impact at 11 mppa vs. 2019 (GVA figures rounded to nearest 10m)

- 2019 direct FTE jobs
- 2019 indirect and induced FTE jobs
- Forecast 11 mppa direct FTE jobs
- Forecast 11 mppa indirect and induced FTE jobs

We also have aspiration for a future onsite Aviation Centre of Excellence to create more highly skilled, good quality jobs and create additional pathways into employment at the airport, with our partners and East London boroughs. This would improve skilled opportunities across the local community and further improve economic benefits over the master plan period and beyond.

The operation of an international airport like ours relies on state-of-the-art engineering and management skills, knowledge and competencies. We are committed to ensuring that the benefits of growth maximise opportunities in the local area, especially in providing new employment. We will continue to work towards the ambitious onsite targets for local employment, currently set at 70% of new recruits from the local area and 40% of new recruits from the London Borough of Newham<sup>41</sup>. We will also continue our work with Newham, other local boroughs and East London agencies to provide residents with work and training opportunities.

In addition to maximising employment opportunities in our local area, our future growth will also benefit businesses across the UK. Further airport development will provide additional employment opportunities in sectors such as energy and utilities, advertising, manufacturing and construction.

Our increased offer of flights to leisure destinations will lead to an increase in international and domestic tourism, supporting more London and local jobs. The projected increase in the number of leisure travellers to 7 million annual passengers, as well as the 70% increase in annual business passengers to 4 million, will boost the tourism sector in London and across the UK through increased spending in food, accommodation, transport, retail and other leisure industries.

As we grow, the airport will remain committed to not only employing local people, but ensuring our business, at all levels, represents the areas around us.

# 4.5 Contributing to wider economic growth £2 billion for the UK economy annually



Our role in supporting economic prosperity is a key component of our plans. Our easily accessible location in the east of London provides a range of benefits to the economy, such as improving access for businesses to international markets. Currently, we estimate that the airport contributes £760 million per annum to the UK<sup>42</sup>. It is expected that on completion of the CADP development this could increase to £1.5 billion. With demand expected to grow to up to 11 million passengers annually over the master plan period, the airport's contribution is expected to further increase to in excess of £2 billion per year.

The additional economic benefits of growth to 11 million passengers per year compared to the benefits delivered by CADP are estimated to be in excess of £500 million. This is made up of the contribution that the airport makes to productivity and economic growth more generally, trade benefits, increased tax receipts from more productive jobs, user benefits, as well as the GVA generated from the airport site and other local employment. The wider economic impacts on GVA are explained below.

## **Productivity and increased economic output due to reduced travel costs and improved competition**

With the full growth shown in this master plan, we have the potential to contribute up to an additional £190 million per annum as a result of increasing productivity and economic output. By being located close to key business districts including the City of London, Canary Wharf and those expanding in the Royal Docks and Stratford, the development of the airport will benefit many enterprises in high value-adding industries, leading to productivity benefits. Productivity benefits will also arise from attracting an increased number of businesses to these districts, leading to a greater concentration of economic activity.

Growth in demand served beyond the current limits would also support businesses to increase economic output as a result of reduced travel costs and increased competitiveness and collaboration. Our forecasts indicate that demand from business passengers will increase by 70% compared to 2019.

### Trade impacts and inward investment

The strength of London's economy stems in part from the high levels of productivity and output generated by sectors that are highly dependent on international connectivity. Improved access to international markets will increase interdependencies, which can help lead to higher levels of trading and inward investment. This will be especially important to London from an international competitiveness perspective in the next decade and beyond.

Our impact on trade, including productivity impacts, is estimated to be up to £73 million per annum when the airport grows to accommodate 11 million passengers. The expected increase in trade in the form of exports and imports will enhance competition and provide a greater choice of goods and services. In turn, this will help to raise baseline productivity in trade-related sectors. This is especially valuable for London as it is an overall net exporter of goods and services.

### More productive jobs

Higher paid and more productive jobs will also have a positive impact on tax revenue to government. We estimate that this could amount to £95 million per annum when the airport reaches 11 million passengers.

### Benefits to passengers

We will be able to offer more flights to more destinations for our passengers. This will contribute to more efficient and convenient journeys for our existing passengers as well as allowing new trips to happen that otherwise would not have been made. In total, we estimate that user, particularly reductions in travel time, benefits will amount to around £68 million per annum with 11 million passengers.



# 4.6 Improving sustainable transport to and from the airport

## New targets for travel by public and sustainable transport modes



Our forecasts predict that once CADP and other planned transport upgrades (DLR and Crossrail) are completed, there will be sufficient capacity on the local transport network to accommodate up to 11 million passengers per year.

Building on the Government's recent announcement to end the sale of diesel and petrol cars by 2030 and our own targets to achieve net zero carbon emissions by 2050, we will aim to further improve our position as the UK's best performing airport for sustainable transport use by our passengers, reducing CO<sub>2</sub> emissions. Some of the additional targets that the airport will work to achieve as it grows to accommodate more staff and passengers are set out below.

### Achieving more sustainable travel

- We will target 80% of journeys to and from the airport to be made by public and sustainable transport modes by the time the airport reaches 11 mppa and acknowledging the Mayor of London's ambitious targets, increasing to 90% by 2041;
- Provide more opportunities for cyclists and pedestrians, along Hartmann Road and Connaught Road (A112), connecting the airport to the Newham cycle network;
- More than double cycle parking provision, reflecting our future position as part of the wider Royal Docks cycling network;
- Install more electric charging points in existing car parks, with provision for electric charging for low emission or zero emission vehicles on all new parking provision;
- Consider charging schemes based on vehicle emissions and/or occupancy to discourage unsustainable transport modes of access;
- Review opportunities to build on our existing staff Lift-share scheme and roll out new staff travel initiatives.

**We will aim to achieve 90%  
of passenger journeys  
by DLR, bus, cycling, walking  
and other sustainable  
transport modes by 2041**

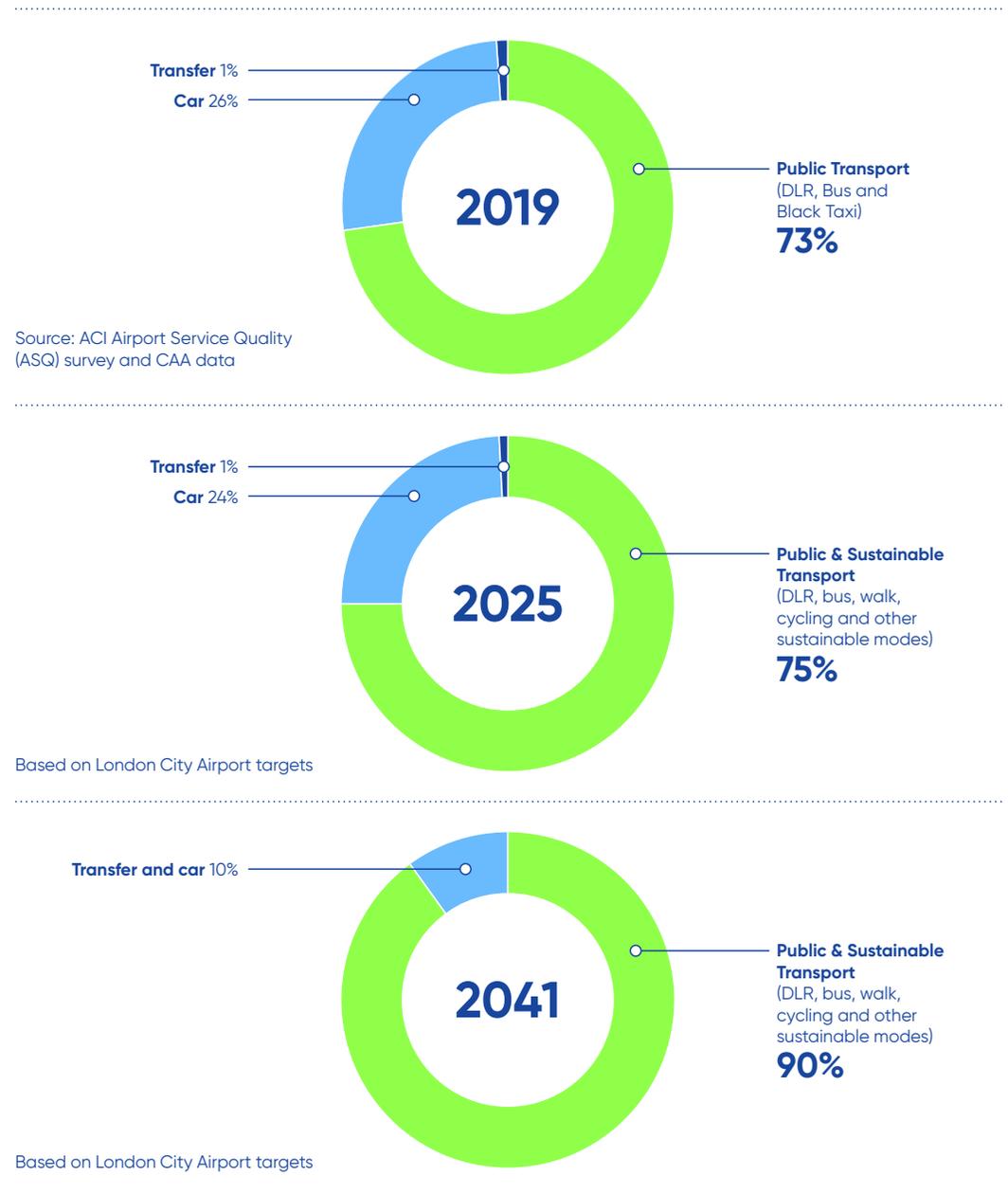
**How we will do this**

- Continue to engage with TfL and other stakeholders to encourage and facilitate investment in the DLR infrastructure and operations, which will be necessary to realise our targets for travel by public and sustainable transport modes;
- Continue to engage with TfL and other stakeholders to assist in the delivery of new public transport, walking and cycling opportunities and to capture these in their planned and future upgrade programmes (including additional connectivity around North Woolwich and the Royal Docks, either by introducing shuttle bus services or improving the existing bus routes);
- Continue to promote sustainable travel and behavioural change through use of technology;
- Continue to explore the potential benefits of better integrating the terminal and DLR station, and minimising level changes to both reduce congestion and to improve the speed and service for passengers;

- Promote river boat journeys via the recently completed Royal Wharf Pier;
- Make better use of the airport site by modifying the CADP single decked car park for multi-storey use. This would facilitate the provision for electric charging for low emission or zero emission vehicles in one area as well as make better use of airport land. Our current plans include up to 300 electric charging points on the airport campus but this will be kept under review over the master plan period;
- Despite a projected increase in passenger demand to 11 million, and a doubling of staff compared to today, we will review the feasibility of limiting any future parking increase to a maximum of 20% provided the necessary public transport improvements are made. This will help deliver our ambitious targets to shift passengers and staff onto more sustainable forms of travel;



Figure 4.5: Transport mode share targets



**Crossrail and London City Airport**

The Elizabeth line will provide a step-change in rail connectivity across the capital. It will run from Reading in the west through central London to Shenfield and Abbey Wood in the east, with train services operating with a five-minute frequency through the eastern sections. One of the benefits of the Elizabeth line will be relieving future congestion on the DLR (in particular between Woolwich Arsenal and London at peak times) and vastly improving connectivity between Heathrow and London City Airport as well as across the city.

The airport will work to improve links with the Elizabeth line by:

- Promoting the link to Custom House station and the rerouting of the 474-bus service to connect the airport and Custom House;
- Working with TfL to promote the Stratford station interchange to enable passengers to have a convenient, covered and secure interchange between the Elizabeth line and DLR; and
- Engaging with TfL on their redevelopment of Poplar DLR Depot to provide a better passenger interchange between the DLR and the Elizabeth line

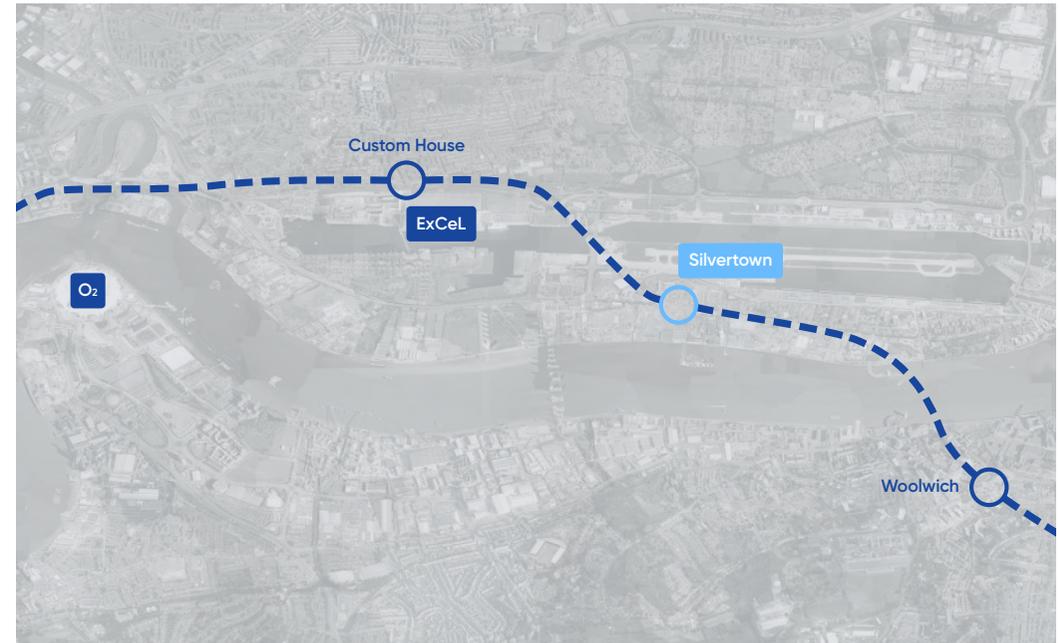
The London Borough of Newham has recognised the potential benefits of a new Crossrail station close to the airport and has identified the benefits of a new dedicated station in its Local Plan and Infrastructure Delivery Plan. A new station could be part of any future changes to the Elizabeth line, such as the Abbey Wood to Ebbsfleet extension, and the airport is working with the promoters of the scheme, Crossrail to Ebbsfleet Partnership, to include it within the next stages of the feasibility and design development process. The airport will also seek to engage with TfL as the proposals are developed in more detail.

While our growth is not dependent upon a new Crossrail station at Silvertown adjacent to the airport, this would provide a significant opportunity to create an outstanding interchange. The new station would improve connectivity from East London to the Estuary, which would benefit residents and businesses, as well as unlocking significant strategic regional benefits, including additional housing across the region<sup>43</sup>.

**Crossrail to Ebbsfleet proposed scheme**



**Figure 4.6:** Potential location for new Elizabeth line station



# 5 Sustainability and environmental strategy

This section summarises the key environmental considerations of the potential changes to meet demand for up to 11 million passengers. It also sets out a summary of measures that would be assessed and put in place as part of any proposals for growth over the master plan period to manage and control effects on the local community and the environment. The topics considered include noise, air quality, carbon and climate change, dock water quality and biodiversity, waste disposal, heritage and archaeology. In line with Government guidance and industry practice, the master plan does not include detailed environmental assessments that would typically inform a planning application for airport related development. Given the master plan is a non-statutory high-level vision to inform Local Plans, it includes a provisional high-level assessment of environmental matters and mitigation measures related to the potential growth over the master plan period only. However, more detailed assessment of these issues would be provided as part of the formal Environmental Impact Assessment (EIA) supporting any future planning application.

## **5.1 Noise**

## **5.2 Air quality**

## **5.3 Carbon and climate change**

## **5.4 Other environmental matters**

## **5.5 Heritage and archaeology**



## Some of the key priorities and future measures that will be put in place

### Air noise

- Accommodate all future growth within our permitted 9.1 km<sup>2</sup> air noise contour area limit which, in accordance with existing planning controls, we will also seek to reduce the size of the contour over time and therefore the number of people that would otherwise fall within it;”
- Maintain our commitment to an eight-hour night time curfew on flights;
- Ensure that no noisier aircraft than are currently allowed to operate will do so in the future; and
- Add to the current comprehensive suite of noise controls to ensure that we mitigate noise effects associated with growth to 151,000 annual air transport movements. This could include further improvements to our Sound Insulation Scheme, which already has the current joint lowest daytime threshold in the UK at 57dB.

### Air quality

- Target 80% of journeys to and from the airport by public and sustainable transport modes by the time the airport reaches 11 mppa and working towards 90% by 2041;
- All vehicles owned by the airport will be London Ultra Low Emissions Zone compliant as soon as practicable;
- All airside vehicles with a permanent vehicle pass will be electric (or zero emissions) or use renewable fuels by 2030;
- Increasing the number of electric charging points to 300 by the time we reach 11 mppa, as well as provision for electric charging for low emission or zero emission vehicles on all new spaces; and
- All future stands will be equipped with fixed or battery powered mobile electrical ground power.

### Carbon and climate change

We are committed to decarbonising as quickly as possible and we achieved carbon neutrality for the airport’s own operations in December 2019. We have further committed to achieving net zero carbon by 2050, alongside partners in the airline and aerospace sectors, and we support wider industry efforts to deliver sustainable growth of the sector. Our commitments include:

- Build upon our carbon neutral status from the airport’s own operations by achieving Level 4+ status and continuing to reduce our business emissions, offsetting through local, national and internationally accredited schemes where they can’t currently be eliminated;
- Achieve net zero carbon emissions for the airport’s operations by 2050, consistent with the UK’s carbon target;
- Work with airlines to deliver more new generation aircraft which are more fuel efficient and will emit fewer carbon emissions per passenger per mile;
- Invest in more low carbon technology and more energy efficient buildings;
- Promote increased sustainable transport usage by staff and passengers;
- Accommodate, where appropriate, any aviation-specific carbon budgets or related initiatives that are included in future Government policy;
- Work with airlines and manufacturers on the hybrid and electric aircraft agenda; and
- Work with NATS to deliver their predicted annual savings in fuel burn and CO<sub>2</sub> emissions through delivery of the Government’s airspace modernisation process.

# 5.1 Noise

## Growing within, and reducing over time, our existing noise contour limit



### Air noise

The term 'air noise' refers to noise from aircraft that are either airborne or are landing or taking off on the airport's runway. The total air noise to which local communities are exposed over a given period depends on the noise emitted by individual aircraft and the total number of aircraft movements (arrivals and departures) in that period. An overall measure of air noise exposure can be depicted on a noise map which shows noise contours<sup>44</sup>. In the UK, noise contours are generally produced for the 92-day summer period (16th June to 15th September), as this is normally the busiest period at airports and therefore represents a worst-case scenario.

### Measures currently in place

Managing the effects of air noise is an absolute priority of ours – both for our local community and those living under our flight paths. As described in Section 1.6 we already have a comprehensive suite of controls in place. These include:

- operating within a fixed noise contour envelope area limit that is checked annually. This envelope relates to the 57 dB  $L_{Aeq,16h}$  noise contour and has an area limit within existing planning controls of 9.1 km<sup>2</sup>;
- operating a comprehensive Sound Insulation Scheme for residential dwellings and public buildings, which already has the current joint lowest daytime threshold in the UK at 57dB  $L_{Aeq,16h}$ . The scheme has recently been improved to include treatment at 63 dB  $L_{Aeq,16h}$  and additional treatment at 66 dB  $L_{Aeq,16h}$ . The tiered scheme ensures that those

closest to the airport and most affected by noise receive a 100% grant for a high level of sound insulation treatment;

- all landing aircraft take a steep glide slope approach. This ensures that aircraft are kept higher for longer, reducing the noise impact on local communities under the arrival flight paths; and
- operating an Incentives and Penalties Scheme to manage how aircraft fly day-to-day and encourage airlines to operate aircraft more quietly, by awarding credits to aircraft that are operated quietly and penalties to those that exceed the upper noise thresholds. The money from any penalties (£600 per dB exceedance) is added to the Community Fund which we have set at a minimum of £75,000 per year to fund local projects. The noise thresholds are more stringent than any other UK scheme for daytime operations. Good performance is rewarded by publishing a league table each year.

These measures are supplemented by a comprehensive noise monitoring system which includes seven fixed monitors as well as mobile monitors which can be placed in the community as required. Noise levels are available through our aircraft noise tracking system called Travis on our website<sup>45</sup>.

**Effectiveness of controls**

As an illustration of the effectiveness of our existing noise controls, which are among the tightest of any European airport, last year we received just five complaints per 1,000 aircraft movements. The table below compares our volume of complaints with those at other London airports in 2018 and shows that we received significantly fewer complaints per 1,000 flights than any other major London airport<sup>49</sup>.

**Noise Contours**

The forecast demand will require an increase in annual aircraft movements beyond our current limit of 111,000 air transport movements. Annual movements are forecast to increase over time reaching up to 151,000 air transport movements.

Air noise contours have been produced based on our projected future fleet mix and our understanding of airlines’ ability to deliver more new generation aircraft, provided that the necessary infrastructure

and incentives are in place. Importantly, all contours collectively fit within the current 57 dB contour area limit of 9.1 km<sup>2</sup>, which shows that future demand can be accommodated within our existing noise contour limit as currently permitted.

The number of flights at the airport in 2020 has been greatly reduced due to the effects of the COVID 19 pandemic. However, as passenger demand for air travel returns, we are confident that the airport will return to growth in line with the previous forecasts, although exactly when this will be achieved is currently uncertain. The potential future noise impacts associated with growth have been assessed against a 5.8 million annual passenger baseline scenario, which was our estimate of the likely throughput in 2020 before the COVID-19 pandemic. This scenario would comply with all of the airport’s existing planning controls and requires no infrastructure in addition to that already permitted and provides a reasonable baseline against which to consider the future evolution of the airport’s noise profile.

Air noise is forecast to reach the current contour area limit as demand recovers in the near term and then reduce as the number of new generation aircraft increases to account for between 75–80% of the passenger jet feet (subject to airline re-fleeting decisions). Our forecasts suggest that at 11 mppa with 151,000 annual air transport movements, around 75% of the passenger jet fleet will be new generation aircraft. Figure 5.2 compares the indicative 57 dB contours based on 5.8, 8.6, 9.8 and 11 million passengers per year. For the 9.8 and 11 million passenger scenarios, two contours are presented showing the range of

expected re-fleeting. If the higher levels of re-fleeting can be achieved, they will provide an opportunity to reduce the contour area and therefore the relative number of people that would otherwise fall within the contour.

The areas of all air noise contours and estimates of the number of people within them are given in Figures 5.3 and 5.4. Figure 5.2 shows a comparison of the 57 dB contours. The small changes in contour shape are due to slight variations in potential aircraft mixes over time.

Based on existing population data, the number of people within the contours (those exposed to 54 dB and above) is forecast to reduce overall. The number of people within the 57 dB contour and above will depend on the degree of re-fleeting and when that is achieved. If higher levels of re-fleeting are achieved, the number of people within these contours is forecast to generally decrease over time. Any local increases in noise will generally be of a very small magnitude and would be assessed as part of any future detailed proposals, taking into account any future development by others within the noise contours. Most people within the noise contours will experience a negligible change in aircraft noise and more people will experience a decrease in aircraft noise than an increase. A small number of people located to the north and south of the airport are forecast to experience a minor increase in noise of less than 3 dB. No one is forecast to experience a significant increase in noise. Overall, the forecast increase to 11 million passengers and up to 151,000 annual air transport movements is not expected to have a significant impact on the local community

Figure 5.1: Comparison of annual noise complaints received by London airports 2018

● Other London Airports  
● London City Airport

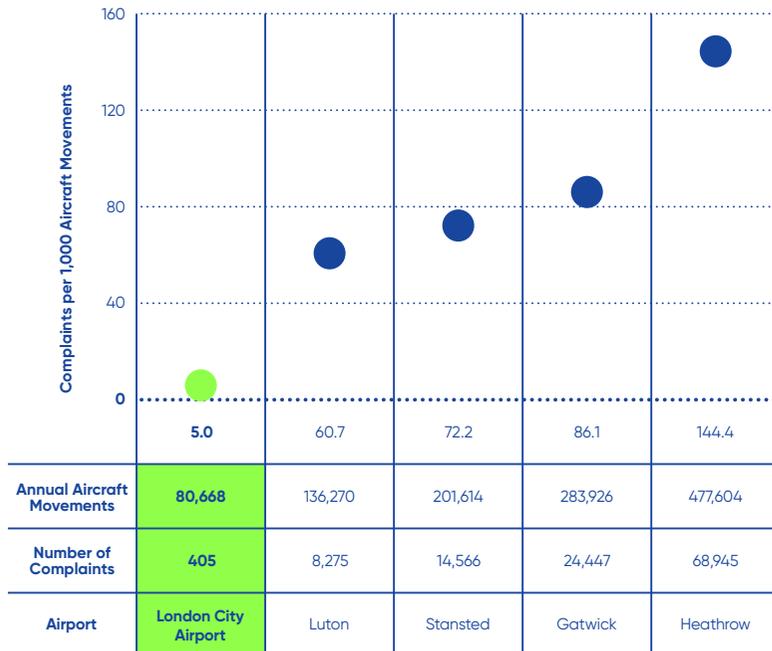
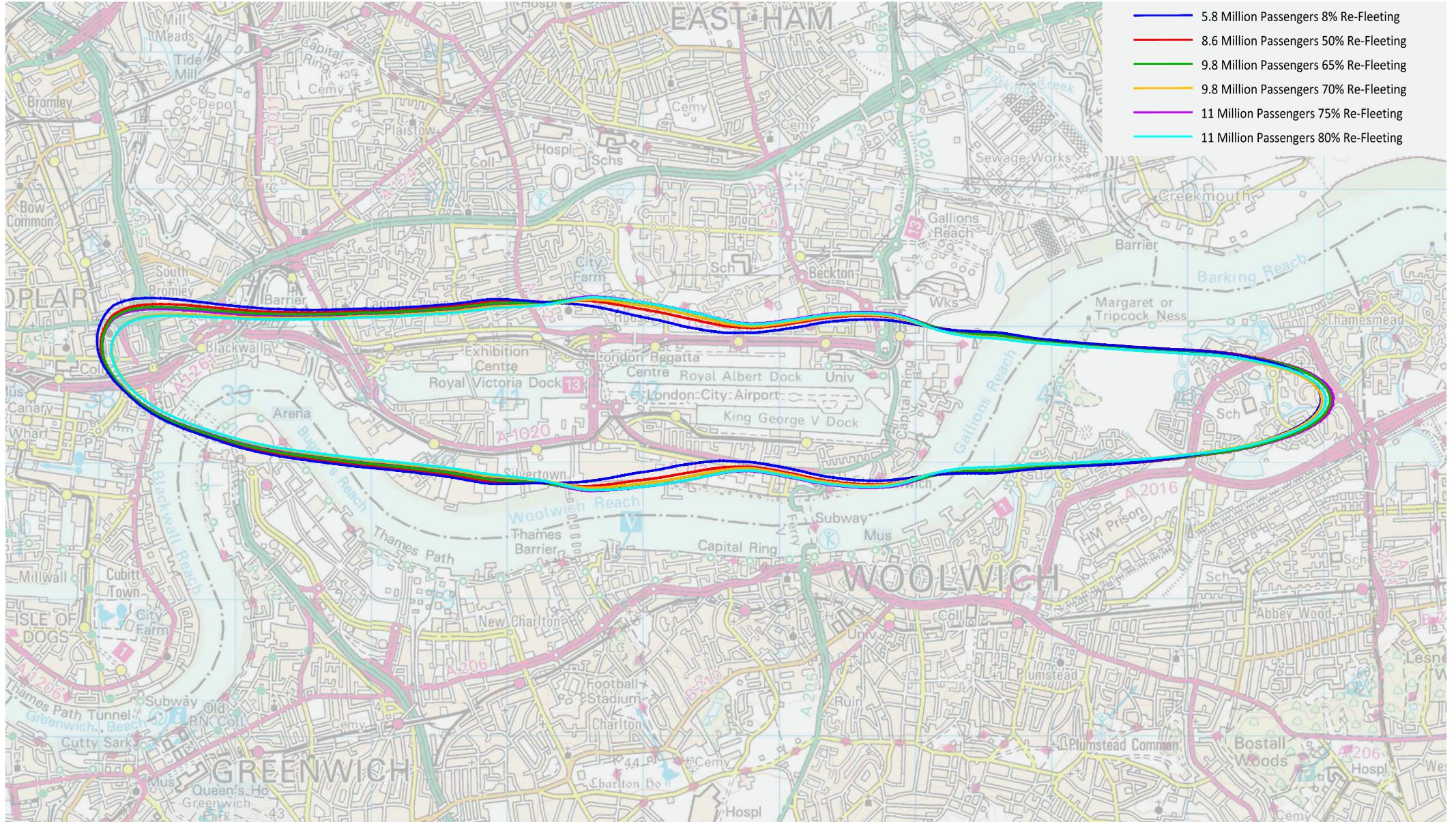


Figure 5.2: Comparison of 57 dB  $L_{Aeq,16h}$  noise contours



due to the increase in the proportion of movements by new generation aircraft. These quieter aircraft will allow us to remain within our current contour area limit, which shows that our noise footprint will be no worse overall than currently permitted and over time we will seek to reduce our contour area, sharing the benefits of the new generation of quieter aircraft.

We are committed to maintaining the eight-hour night time closure. Although there are currently no criteria for the assessment of respite, we recognise that any potential changes to existing operational hours would change how local residents experience noise. Should any changes be proposed to the existing operations, these would be fully assessed and consulted upon before the relevant authority considers whether to allow them; appropriate mitigation or compensatory measures would be provided.

**Future measures to mitigate air noise**

Future measures to further mitigate air noise could include enhancements to our Sound Insulation Scheme. We will also seek to ensure that our noise control and abatement procedures take on board any recommendations from future government guidance.

We will deliver future growth within our permitted 9.1 km<sup>2</sup> air noise contour limit and, consistent with current planning controls, review whether this can be reduced as more modern aircraft are introduced.

**Ground noise**

The main sources of ground noise include aircraft taxiing and manoeuvring between the runway and aircraft stands, use of aircraft auxiliary power units (APUs) and testing (ground running) of aircraft engines.

We currently have a comprehensive suite of controls in place to manage and mitigate ground noise. These include:

- Phased delivery of battery powered mobile or fixed electrical ground power (FEGP) on existing aircraft stands, to reduce the use of diesel-powered mobile ground power units (MGPUs);
- Limiting the use of auxiliary power units to 10 minutes before departure from the stand and 10 minutes after arrival, except under exceptional circumstances;
- Restricting engine testing to designated areas except in emergencies;
- Engine test and maintenance activities are restricted to those associated with engine rectification, rather than routine testing;
- Operating within an engine testing noise limit of 60 dB L<sub>Aeq,12h</sub> which is based on the average daily noise level during the noisiest month of the year; and
- Maintaining and developing the existing airport buildings and barriers, which are specifically designed to act as a continuous noise barrier to protect properties south of the airport from ground noise.

Due to the forecast increase in aircraft movements, ground noise is forecast to increase slightly. In most areas the absolute levels of ground noise are currently relatively low and are forecast

to remain so in the future. Air noise, road traffic noise and/or industrial noise are generally greater sources of noise in the environment, even close to the airport.

Ground noise tends to be highest close to the airport, within the eligible zone of our Sound Insulation Scheme. This means that dwellings in this area have been or are eligible for sound insulation treatment to mitigate the effects of aircraft noise. In the case of newer dwellings they will have been designed to mitigate noise from the airport when they were built.

In the event that any new stands are proposed in the future, appropriate noise barriers will be constructed to ensure that satisfactory mitigation is in place prior to operating any new stands.

Best practicable means will be used to minimise the noise impact of any future construction works at the airport and detailed construction noise predictions will be made for any future proposals that involve construction works to identify any properties likely to be significantly affected.

The airport also operates a Construction Sound Insulation Scheme, in association with CADP, which provides enhanced sound insulation to dwellings predicted to be exposed to construction noise above certain thresholds. Properties forecasted to be significantly affected by any future construction works will be eligible for similar treatment prior to the start of any work.

Figure 5.3: Forecast noise contour areas

Noise Contour, dB L <sub>cont, 15h</sub>	Noise Contour Area, km <sup>2</sup>					
	5.8 mppa 8% re-fleeting	8.6 mppa 50% re-fleeting	9.8 mppa 65% re-fleeting	9.8 mppa 70% re-fleeting	11 mppa 75% re-fleeting	11 mppa 80% re-fleeting
54	16.0	16.1	15.8	15.2	15.8	15.0
57	9.0	9.1	9.1	8.7	9.1	8.7
60	4.8	4.9	4.9	4.7	5.0	4.7
63	2.4	2.5	2.5	2.4	2.5	2.4
66	1.3	1.3	1.3	1.3	1.4	1.3
69	0.7	0.7	0.8	0.7	0.8	0.8

Figure 5.4: Forecast number of people exposed to noise

Noise Contour, dB L <sub>cont, 15h</sub>	Population <sup>64</sup>					
	5.8 mppa 8% re-fleeting	8.6 mppa 50% re-fleeting	9.8 mppa 65% re-fleeting	9.8 mppa 70% re-fleeting	11 mppa 75% re-fleeting	11 mppa 80% re-fleeting
54	107,100	104,600	102,400	96,000	101,000	94,400
57	45,700	45,900	45,400	42,900	45,900	42,700
60	16,500	18,100	18,600	17,300	19,100	18,000
63	4,500	4,700	4,900	4,200	4,700	4,200
66	1,200	1,300	1,300	1,200	1,600	1,400
69	0	0	0	0	0	0

# 5.2 Air quality

## Managing air quality around the airport

**Air quality at London City Airport**  
 The airport already operates a comprehensive air quality monitoring network, with no recorded breaches since monitoring began in 2006. The network comprises two onsite automatic monitoring stations and 17 local passive monitoring stations. The pollutants measured include nitrogen oxides (NO<sub>x</sub>), nitrogen dioxide (NO<sub>2</sub>), fine particulate matter (PM<sub>10</sub>) and, since the end of 2018, very fine particulate matter (PM<sub>2.5</sub>).

We are committed to monitoring ambient air quality and sharing the results with the local authority. As mentioned in Section 1, near real time data are available online<sup>47</sup> and the findings are reported annually. Our monitoring data shows that concentrations are under the UK air quality objectives for all the pollutants monitored. Figure 5.5 shows the recent annual mean NO<sub>2</sub> concentrations from the two automatic onsite monitors and four of the local sites too. It shows that monitored levels have been consistently well below the UK air quality objective over the past four years.

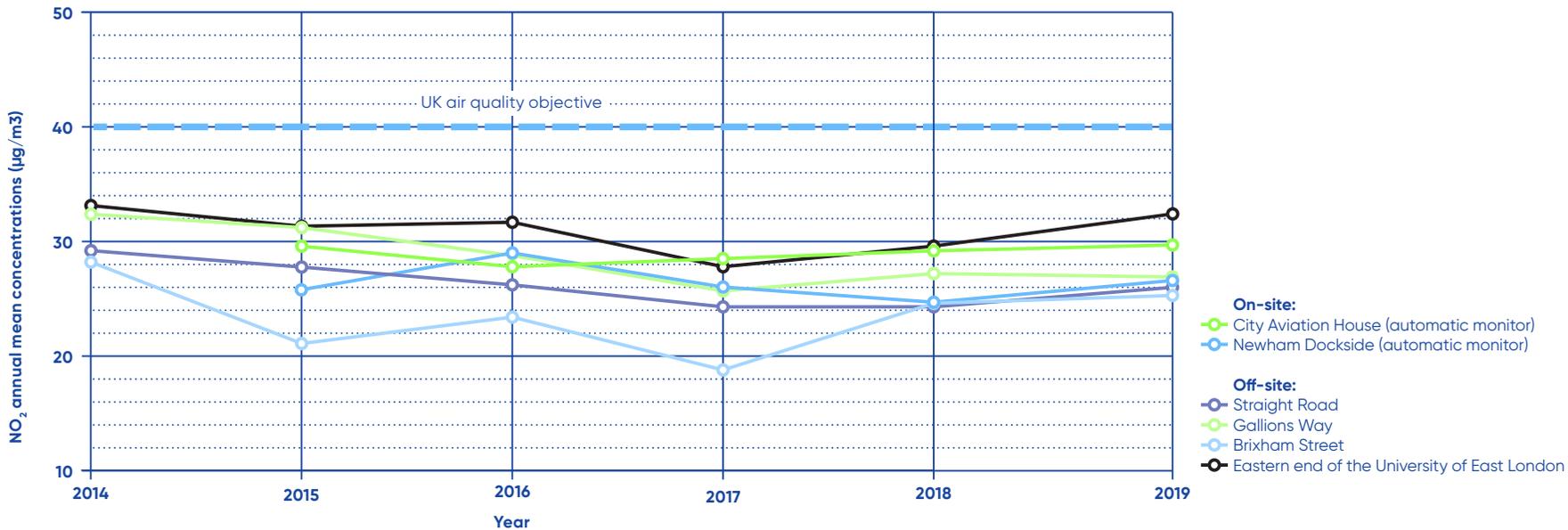


Figure 5.5: Annual mean NO<sub>2</sub> concentrations (2014 - 2018)

### Measures we are currently taking to reduce effects

The main potential impact on air quality arises from aircraft on the ground, aircraft in the air, ground-based activity such as vehicles, machinery and mobile power plant, stationary energy plant and road traffic. Emissions from aircraft above 1,500ft (equal to 457m) generally have a negligible impact on ambient concentrations at ground level. Similarly, the impact of near-ground and aircraft emissions and other airport activity on ambient concentrations is limited to within a few hundred metres of the point of emission. At greater distances, the main air quality issues are those due to passenger and staff travel to and from the airport.

Our Air Quality Management Strategy (AQMS) lists the measures we are currently taking to reduce the effects of pollution on air quality. A full report is included in our Annual Performance Report which is available on our website<sup>48</sup>. Some of the key measures include:

- As part of CADP, use of gas fired Combined Heat and Power (CHP) systems to suit the airport's base load profiles and photovoltaic panels on the terminal building roof;
- Provision of ultra-low NO<sub>x</sub> boilers and CHP systems that include 95% catalytic reduction of emissions;
- Installation of fixed electrical ground power (FEGP) or electrical mobile power units to all CADP stands;
- An airport wide strategy for expanding the use of low emission and electric vehicles;

- Requiring all vehicles issued with a new Airside Vehicle Permit to comply with the latest vehicle emissions standards for road vehicles (Euro Standards); and
- Controlling Auxiliary Power Units (APU) ground running and engine testing and undertaking routine emissions testing for airside vehicles.

### Additional measures

An air quality assessment was carried out to quantify the effects of the master plan proposals. Sources explicitly included in the model included all aircraft operations during taxiing, take-off, climb-out and approach, up to a ceiling height of 3,000 feet (consistent with the landing and take-off cycle); all ground support equipment; energy sources; and traffic associated with surface access. Sources not explicitly included in the model were accounted for within the background concentration maps published by Defra.

As we reach 151,000 annual air transport movements and 11 mppa, the maximum concentrations are predicted to decrease, compared with the current situation, in the vicinity of the airport. The highest predicted annual mean NO<sub>2</sub> concentration is 21.6µg/m<sup>3</sup> and the highest predicted annual mean PM<sub>10</sub> and PM<sub>2.5</sub> concentrations were 16.8µg/m<sup>3</sup> and 10.4µg/m<sup>3</sup> respectively, all of which are below the relevant air quality objectives. Although emissions from aircraft are set to increase due to the greater number of aircraft movements, there is a limited impact on ground level concentrations as much of the emissions occur at altitude. Emissions from road transport have a much greater impact on ground level pollutant concentrations due to the short distance between source and

receptor. The decrease in concentrations at ground level principally relates to the use of more sustainable transport and, in particular, the introduction of cleaner road vehicles, in the timeframe that we expect to reach 11 mppa, as a result of more stringent emissions standards. The airport can therefore meet demand and grow without causing any exceedance of air quality objectives.

To mitigate our impact on air quality we will:

- work with airlines to encourage improvements in aircraft performance and so reduce emissions;
- provide electrical power solutions for ground operations on all future stands;

- ensure all vehicles owned by the airport will be ULEZ compliant as soon as practicable;
- ensure all airside vehicles with a permanent vehicle pass will be electric (or zero emissions) or use renewable fuels; and
- ensure that many more parking spaces are equipped with electric charging points, with provision for electric charging for low emission or zero emission vehicles on all other spaces.



# 5.3 Carbon and climate change

## Reducing emissions to net zero by 2050



The airport is committed to playing its part in reducing the impact of aviation on climate change to build a sustainable future for the aviation sector. We have made progress in cutting carbon emissions from every part of our business, achieving carbon neutral accreditation for the airport's own operations in 2019, targeting Level 4+, and bettering our 2020 target to achieve a 20% reduction in carbon emissions per passenger compared to 2013.

We will play our part in contributing to the London Borough of Newham's recent declaration of a 'climate emergency' and will work with the council to help achieve its objectives of reducing carbon emissions throughout the borough. We also support the objectives of the GLA to decarbonise London's energy and transport systems.

Alongside industry partners and consistent with the aims of the Government, we will achieve net zero carbon emissions by 2050 for airport operations, as agreed at the ACI Europe Congress in June 2019. To achieve this, we will embrace innovation and change operational practices to reduce emissions even further and meet international industry standards. As a member of the UK Sustainable Aviation coalition, London City Airport has also joined the wider aviation industry in getting behind a commitment to achieve net zero carbon emissions by 2050, based on a thorough review of the opportunities to cut aviation emissions. This commitment forms a central pillar of the *Decarbonisation Road-Map: A Path to Net Zero*<sup>49</sup>, published by Sustainable Aviation on 4 February 2020, which sets out where reductions can come from, including through

smarter flight operations, new aircraft and engine technology, modernising UK airspace, the use of sustainable aviation fuels, and high-quality market-based policy measures.

The airport can exert significant influence over activities which contribute to climate change, such as: emissions from aircraft on the ground and in the landing and take-off cycle; emissions from airport buildings and energy plant; ground operations including airside vehicles and ground power units; surface access transport; construction and refurbishment works; and the sustainable consumption of water, energy and natural resources by its own activities and those of our suppliers and tenant companies based at the airport.

Acknowledging the importance attached to this matter for communities, UK Government, the GLA and Newham, the airport wants to work with all of these and industry partners to lead the way in creating a net zero carbon future.

Department for Transport's *Beyond the Horizon* (2018) policy statement and the *Aviation 2050: the future of UK Aviation*<sup>49</sup> green paper, indicated that Government analysis showed the UK can keep within its legally binding carbon budget while also allowing airports to make best use of their existing runway capacity. Meeting these targets, and stricter zero carbon objectives legislated for by the Government in June 2019, needs to be tackled at an international level because air travel transcends national borders. The Committee on Climate Change (CCC), in its letter to the Secretary of State for Transport in September 2019<sup>50</sup>, recommended

that the “primary approach to reducing IAS (International Aviation and Shipping) emissions should be at the international level, given the global nature of these sectors and the risk of carbon leakage from a unilateral UK approach”. The Government’s response to the CCC recommendations will be published and inform its aviation strategy. In his written statement on 27 February 2020, following the Court of Appeal judgment relating to the Government’s consideration of the Paris Climate Accord in designating the Airports National Policy Statement, the Secretary of State for Transport stressed that making best use of airports across the UK remains very much part of Government policy<sup>51</sup> and will be taken forward in parallel with the Government’s climate change commitments.

Through partnership with Government and industry, we will aim to ensure our vision is consistent with, and will take account of, Government policies and guidance as appropriate.



## Measures contributing to the achievement of net zero carbon emissions by 2050

- Increase opportunities to further reduce emissions by accommodating more fuel-efficient new generation aircraft. These new generation aircraft are up to 17% more fuel efficient than current models and they can accommodate more seats, meaning carbon emissions per passenger mile flown are lower than with existing and previous generation aircraft. The more efficient airfield layout achieved through CADP will also play its part in reducing taxiing time, thus reducing emissions from aircraft on the ground;
- Continue our programme of upgrading existing buildings, plant and equipment to make them more energy efficient and to extend the life of our assets. Measures include installing FEGP or electrical mobile power units to all stands, investing in low energy and low carbon technology, such as low energy lighting and fuel-efficient ground vehicles;
- Play our part in reducing air emissions inflight progressively over time by supporting the decarbonisation of the aviation sector where possible, including use of sustainable aviation fuels. That’s why we support, in principle, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), the first global carbon pricing instrument covering an entire sector. Co-ordinated global action of this kind will result in a greater CO<sub>2</sub> mitigation in international aviation than any domestic policy for aviation can achieve;
- Participate in the Government’s airspace modernisation programme, which seeks to deliver annual savings of CO<sub>2</sub> by adopting more efficient operating procedures and allowing aircraft to fly more direct routes;
- We are targeting an increase in the proportion of journeys by public and sustainable transport modes to 90% by 2041 in order to reduce carbon emissions; and
- Reduce overall demand for energy in buildings current and future through the adoption of energy efficiency measures and controls, including use of photovoltaics.

# 5.4 Other environmental matters

## Managing water quality, biodiversity and waste disposal



### **Dock water quality and biodiversity**

Our current Sustainability and Biodiversity Strategy contains a number of specific objectives and targets, progress against which is reported in our Annual Performance Report.

The Royal Docks support an unusual mix of both sea and freshwater fish species, arising as a result of the docks' location being transitional between saline seawater and freshwater.

In 2017, we installed an artificial fish habitat (submerged wire mesh panel) into the KGV Dock to compensate for the loss of sections of the dock wall during the CADP construction programme. These structures provide an alternative substrate for algae growth and marine invertebrates to colonise naturally which, in turn, provides a food source for fish and offers a space for the fish fry and invertebrates to shelter in. We will investigate how we can go further and will look at developing a dock water aeration system and additional artificial habitat systems to further enhance the biodiversity and maintain a flourishing marine community at the airport.

Runoff from the airport, which discharges to the River Thames via Thames Water Utilities, is also regularly monitored to ensure compliance with our discharge consent. We have been exploring opportunities to manage the potential impacts from de-icer, pesticide and herbicide use more carefully. We have already trialled and put into use more environmentally friendly ground de-icers, which affect water quality less than traditional glycol-based alternatives. The utilisation of the airport's certified Environmental Management System will ensure that effects on water quality and ecology are considerably reduced and effectively monitored.

Previous and current construction methods to build stands over KGV Dock have been selected to avoid pollution of the underlying groundwater and to minimise the disturbance of dock sediment and bed material as far as reasonably practicable, thus reducing the risk of adverse effects on water quality. These tried and tested techniques have been effective and are likely to be re-used in the construction of any future stands over the dock if required.

Throughout 2018 and 2019 clean excavated material from the ongoing piling and deck construction works in KGV Dock was transported by barge for re-use at the Rainham Marshes Lagoon Restoration Project which is managed as a nature reserve. It is estimated that this initiative, and the transport by barge of over excavated materials for reuse, has removed 1,583 HGV movements from the local highways network. This equates to a reduction in carbon emissions of 96.4 tonnes of CO<sub>2</sub>.

### Waste disposal

We were one of the first UK airports to remove plastic straws from all our food and drink outlets. We have also helped to reduce the application of single use plastic by providing free drinking water refills and are looking to reduce plastic use throughout the airport, wherever possible.

We will continue to manage our waste according to the principles of the waste hierarchy (reduce, re-use, recycle, recover, dispose) and continue to work with our business partners to minimise the production of waste, promoting the re-use and recycling of waste materials in order to retain our status as a 'zero waste to landfill' company. This will also include providing convenient collection facilities, incentivising recycling and waste reduction with our business partners, and working with airlines and organisations such as Sustainable Aviation to help explore options to recover more recyclables from cabin waste.

Our target is that at least 70% of waste will be recycled or composted. Where this is not feasible, waste will continue to be sent for energy recovery to ensure that as an alternative we continue to eliminate all waste going to landfill. We will also look to implement a waste reduction strategy.



# 5.5 Heritage and archaeology

## Recognising the history of the Royal Docks

While not a formally listed heritage feature, King George V Dock and its surviving pontoons, dock wall and adjoining dockside features, such as sections of old railway tracks, do have heritage value. Therefore, we have invested considerable time and resources surveying and recording these features and, where possible, will retain them in-situ within our development plans. As part of CADP we also plan to open up the dockside to public access for the first time with heritage boards and other signage and we have provided coping stones from the dock wall for reuse in local park projects.

As part of any future development we would again evaluate the potential for 'townscape and visual impacts' on the surrounding community and how best to adapt the airport infrastructure to minimise impact.



# 6 Public Safety Zone and other safeguarding

This section presents any potential changes to the Public Safety Zone due to growth in annual air transport movements to 151,000 and summarises the aerodrome safeguarding process adopted by the airport and which is unchanged by the forecast growth.

## 6.1 Public Safety Zone and other safeguarding

# 6.1 Public Safety Zone and other safeguarding

## Enhancing the safety and security of the site



### Safety and security

Airport safety and security requirements are subject to a range of statutory regulations, for example covering access controls, passenger and baggage search, safety on the airfield and in the area surrounding the airport. We are committed to the highest standards in safety and security to meet or exceed regulatory requirements. As the airport continues to develop, we will enhance safety and security through the design and operation of new facilities, technologies and infrastructure.

### Aerodrome safeguarding

We make every effort to engage and work with developers and other third parties at an early stage to ensure that aerodrome safety is not compromised while facilitating the ambitious development targets across East London.

Local planning authorities consult the airport on any planning applications that may have an impact on the safety of our operation. This process is known as aerodrome safeguarding and is intended principally to ensure that no obstacles are built which would conflict with the safe operation of aircraft.

The statutory provisions are contained in 'The Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) Direction 2002 and DfT/ODPM Circular 01/2003.

We do not expect any changes proposed in this master plan to affect the current aerodrome safeguarding around the airport which has long been established. Because safeguarding is a function of existing physical obstacles, the runway configuration (which will remain unchanged) and aircraft operating procedures, which are prescribed by London City Airport's Operating Licence (which is not expected to be affected by any changes shown in this master plan), the Obstacle Limitation Surface and other operational restrictions would be unaffected.

**Public Safety Zones**

The risk of air accidents occurring as aircraft arrive at or depart from the airport, while extremely low, is such that the use of land at the ends of the runway is restricted. These designated areas are known as Public Safety Zones (PSZs). The Government’s aim (as set out in Department for Transport (DfT) Circular 01/2010 ‘Control of Development in Airport Public Safety Zones’) is to ensure, through planning policy, that there is no increase in the number of people living, working or congregating in PSZs and that, over time, the number should be reduced as circumstances allow.

The airport’s current PSZ was published in 2010 before the approval of CADP in 2016. It was published by the DfT in 2010 and is shown on Figure 2.4. In determining the CADP planning application it was accepted by Government that the PSZ would be slightly larger. Because of an ongoing national review of the PSZ policy and risk calculation model, the Government has yet to formally request a refresh of, or publish, an update to the airport’s current 2010 PSZ.

Nonetheless, due to the nature of growth in demand that we anticipate (through a higher proportion of scheduled air transport movements and more modern aircraft which have a lower risk profile than, for instance, corporate and private aircraft) the forecast changes in the PSZ compared to the CADP PSZ are limited. Despite a forecast increase to 151,000 air transport movements by, the statistical risk of an incident affecting public safety would likely remain the same in overall terms (albeit in all scenarios the risks remain very low).

The airport commissioned the National Air Traffic Services (NATS) to undertake a third-party risk assessment to understand the implications of forecast growth. Figure 6.1 shows that the future predicted PSZ is broadly consistent with those previously predicted for the currently permitted 111,000 air transport movements per year (passenger and business flights). While the increase in the number of flights could marginally increase the extent of the PSZ when compared to the CADP PSZ, in practice we consider that it is more likely that the PSZ zones will be similar in size because over time the airport has the flexibility to phase out the operation of its Jet Centre which is largely used for corporate or private aircraft and prioritise its use by new generation aircraft.

Figure 6.1: Public Safety Zone (PSZ) comparison for CADP v 2035 Master Plan

**PSZ Contours (1 in 100,000)**

- CADP forecast PSZ 2025
- Master plan forecast with Jet Centre
- Master plan forecast without Jet Centre



**Risk Contours (1 in 10,000)**

- CADP forecast PSZ 2025
- Master plan forecast with Jet Centre
- Master plan forecast without Jet Centre



# Appendix

## **A.1**

### **Glossary of terms**

## **A.2**

### **Master plan phasing**

## **A.3**

### **References**

# A.1

## Glossary of terms, abbreviations and acronyms

### ABP scheme

Advanced business parks (ABP)  
£1 billion scheme between Chinese company (ABP) and the Mayor of London to create a trade hub for Asian businesses to invest in the UK

### ACA

Airport carbon accreditation scheme  
Independent institutionally endorsed, carbon management certification standard for airports

### Aircraft stands

Aircraft parking positions

### Aircraft holding points

Locations where aircraft can be held before entering the runway in order to facilitate efficient surface movement of aircraft

### Apron

The aircraft manoeuvring area including and adjacent to the aircraft stands

### Airport related use

Land within the airport's ownership available for airport related uses

### Airport operating hours

The hours between which the aircraft can take off and land

### Airfield

The operational area including the runway and taxiways

### APU

Auxiliary power units

### ASAS

Airport surface access strategy

### ASQ

Airport service quality awards  
The world's leading benchmarking survey with over 380 airports participating across 90 countries from Airports Council International

### ATM

Air transport movements  
Aircraft take-offs and landings at an airport

### AQMS

Air quality management strategy

### BA

British Airways

### Biodiversity

The different plants or animal life in an area or habitat

### BREEAM

Building research establishment environmental assessment  
Method of assessing, rating, and certifying the sustainability of buildings

### CAA

Civil Aviation Authority  
The national supervisory authority for the planning and regulation of national airspace

### CADP

City Airport Development Programme  
Delivering phase two of the 2006 master plan for development of the airport's infrastructure to 6.5 million passengers.

### Carbon neutral

Carbon neutrality under the Airport Carbon Accreditation programme, Level 3+. The term 'carbon neutrality' includes the use of carbon offsetting where emissions cannot currently be eliminated

### CAV

Connected autonomous vehicle

### CHP

Combined heat and power

### CFE

Community Food Enterprise  
Social enterprise food business and a registered charity based in East London working to improve food security

### Code C aircraft

New generation aircraft like Airbus A220-100 and Embraer E190E2

### Community Fund

£75,000 annual fund from London City Airport used to support organisations and create positive change for communities in the local area

### Community sponsorship fund

30th year anniversary community sponsorship fund from which 15 recipients located in East London received £30,000 in grants ranging from £300 - £3,000

### CRC

Carbon reduction commitment

### CSIS

Construction sound insulation scheme

### Decibel

A measure of the intensity of sound levels

### Demand forecast

The predicted level of passengers and aircraft that will use the airport in the future

### DFT

Department for Transport

### DLR

Docklands Light Railway

### EASA

European Aviation Safety Agency  
Agency of the European Union with responsibility for civil aviation safety

### East London

London boroughs - Barking and Dagenham, Bexley, Greenwich, Hackney, Havering, Lewisham, Newham, Redbridge, Tower Hamlets and Waltham Forest, as well as Epping Forest District Council

### EIA

Environmental impact assessment

### EV

Electric vehicle

### FEGP

Fixed electrical ground power

### FTE

Full-time equivalent (jobs)

### Fuel Farm

Storage and distribution facility for aviation fuel

### GDP

Gross domestic product  
Used to determine economic performance

### GLA

Greater London Authority

### Good growth

Growth that provides benefits for the local community, London and the UK, while also mitigating for negative impacts

### GPU

Ground power unit

### GSE

Ground service equipment

**GVA**

Gross value added

**Jet Centre**

Corporate aviation facility

**KGV**

King George V

**L<sub>Aeq,16h</sub>**

Where noise levels vary with time, it is necessary to express the results of a measurement over a period of time in statistical terms. The most widely applicable unit is the equivalent continuous A-weighted sound pressure level (L<sub>Aeq,T</sub>). It is an energy average and is defined as the level of a notional sound which (over a defined period of time T, in this case 16 hours (06:30-22:30)) would deliver the same A-weighted sound energy as the actual fluctuating sound.

**LAMP**

London airspace management programme  
Proposal to modernise airspace arrangements in south-east England

**LBN**

London Borough of Newham

**LCY**

London City Airport

**LHR NWR**

London Heathrow Airport north west runway scheme

**Local area**

East London boroughs of Newham, Tower Hamlets, Greenwich, Bexley, Lewisham, Southwark, Barking & Dagenham, Havering, Redbridge, Waltham Forest and Hackney, as well as Epping Forest District Council

**MaaS**

Mobility-as-a-service

**Master plan**

The airport's plan to safeguard space for potential future development

**MGPU**

Mobile ground power units

**Mode share**

The percentage of travellers using a particular type of transportation or number of trips using said type

**MPPA**

Million passengers per annum

**MSCP**

Multi-storey car park

**MTS**

Mayor of London's Transport Strategy, 2018

**NATS**

National Air Traffic Services  
National provider of air traffic control and air-space management

**New generation aircraft**

New modern aircraft that are quieter and more fuel efficient than previous aircraft types

**Net zero**

Achieving an overall balance between emissions produced and emissions taken out of the atmosphere without the need to rely on the use of offsets to achieve zero emissions.

**Noise contour**

Noise levels can be computed at individual locations of interest, but to show how noise can vary over extended areas, noise metric results like L<sub>Aeq,16h</sub> are often drawn on maps in terms of lines connecting points of the same noise level, these lines are called noise contours. Similar to topographical maps showing the elevation of terrain in an area, noise contours are useful for comparing aircraft noise exposure throughout an airport community.

**NPPF**

National Planning Policy Framework, 2019

**NPS**

National policy statement

**OLS**

Obstacle limitation surface

**ONS**

Office for National Statistics

**Phasing**

The different stages and time periods of development at the airport

**PSZ**

Public safety zone  
Areas of land at the end of runways established at the busiest airports in the UK, within which certain planning restrictions apply. These aim to control the number of people on the ground at risk in the unlikely event of an aircraft accident on take-off or landing

**Ramp**

See Apron

**Royal Docks Enterprise Zone**

Designated area in the Royal Docks that provides tax breaks and government support to enable local economic growth

**Runway**

Defined rectangular area at an airport prepared for the landing and take-off of aircraft

**Section 106**

Planning agreement which controls the operation of the airport and secures mitigation measures

**SI scheme**

Sound insulation scheme

**SME**

Small or medium sized enterprise  
Defined by the European Commission as a business or company:

- that has fewer than 250 employees; and
- has either (a) annual turnover not exceeding €50 million (approximately £40 million) or (b) an annual balance sheet total not exceeding €43 million (approximately £34 million); and
- of whose capital or voting rights, 25 per cent or more is not owned by one enterprise, or jointly by several enterprises, that fall outside this definition of an SME

**Sound insulation scheme**

London City Airport scheme providing eligible properties associated treatments for sound insulation funded by the airport

**Statutory public consultation**

A consultation which allows local residents to provide their thoughts on the airport's plans

**STEM**

Science, technology, engineering and maths

**STOL**

Short take-off and landing

**SuDS**

Sustainable urban drainage systems

**Support facilities**

Additional facilities required to help with the operation and safety of the airport

**Surface access**

A collective term for the different modes of transport used to travel to and from the airport

**Sustainable transport**

Sustainable transport includes public transport, walking, cycling, low and ultra-low emission vehicles and car sharing, as defined by the National Planning Policy Framework (2019)

**SWDS**

Surface water drainage strategy

**Taxilane/Taxiway**

Defined path at an airport established for the taxiing of aircraft and intended to provide a link between one part of the airport and another including stands, apron areas and the runway

**TFL**

Transport for London  
Local government body responsible for the transport system in Greater London

**TORA**

Take off run available

**Travel Plan**

A document setting out the objectives and actions to promote safe, healthy and sustainable transport options.

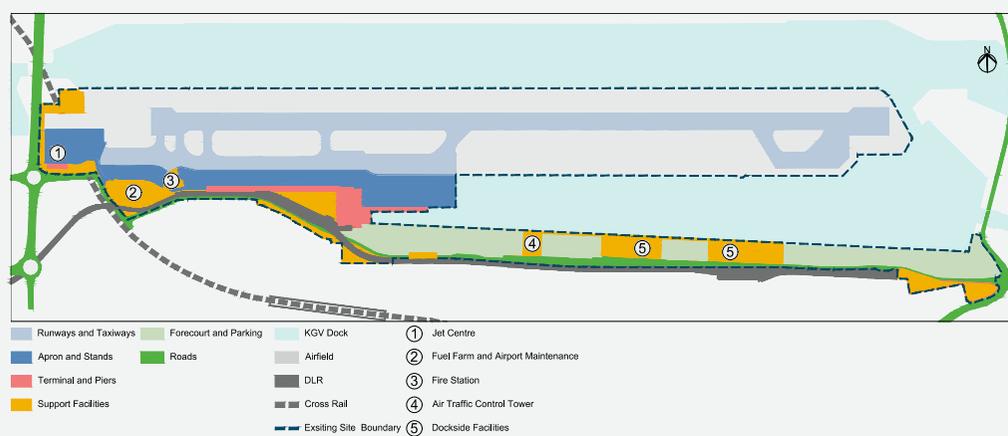
**ULEZ**

Ultra low emission zone  
Designated zone in Central London where a daily charge is applied to vehicles in the zone to help reduce exhaust NOx and PM emissions

# A.2 Master plan phasing

## Potential phasing of development to meet demand

Figure A.2.1: Existing Plan



The forecasts show a progressive growth in passenger numbers and aircraft movements over time and this master plan has been developed so that the infrastructure proposals can be incrementally provided to reflect this. As evidenced by the changes to the predicted forecasts in the 2006 master plan (Section 2.1), forecast growth can change as a result of a number of variable factors, such as, changes to Government and local policies, economic considerations, rate of re-fleeting by airlines and the demand for air travel. Maintaining an ability to phase development over the long term allows these variables to be taken into account if they change in the future.

The following plans illustrate an indicative three-phased approach showing how the airport could potentially develop over time from the existing layout to the CADP plan and then through the master plan period.

Phase 1: The key airfield changes from the CADP layout are the potential development of two new generation aircraft stands and additional runway hold points to the west of the Fire Station, within the airport boundary. To facilitate these infrastructure changes the fuel farm and some operational support facilities could be relocated to the dockside east of the terminal, also within the airport's ownership. A multi-storey car park could be built to free up space on the dockside for the support facilities and other future airport land uses. Additionally, and depending on airline re-fleeting plans, there is also the potential to adapt the infrastructure on the Jet Centre apron in order to accommodate one or two new generation aircraft stands, if required in this phase or in a later phase.

Phase 2: The proposed layout for this phase is the same as Phase 1 as the growth in demand we believe could be accommodated by the terminal and apron infrastructure already provided, subject to some adjustments.

Phase 3: The key changes from the Phase 1 / Phase 2 layouts are the addition of up to three stands at the eastern end of the apron, which would need to be constructed over the dock as an extension of the stands currently being delivered as part of CADP. There may need to be some adjustments to the west apron stands and West Pier to accommodate more of the cleaner, quieter new generation aircraft.

The ongoing transformation and expansion of the terminal building and associated forecourt as part of CADP should, together with further technological advancements, provide enough capacity to handle much of the anticipated growth in passenger demand to 11 mppa. However, some modifications to the interior of the terminal buildings may be required to ensure that the building can adequately process the passenger and baggage demand forecast at peak times.

The Rendezvous Point (RVP) and second Vehicle Control Point (VCP) provided as part of CADP near the potential Aviation Centre of Excellence (location 8 on Figure A.2.5) would need to be relocated further to the east in this phase of the master plan due to the extension of the east pier and apron.

Figure A.2.2: CADP Plan

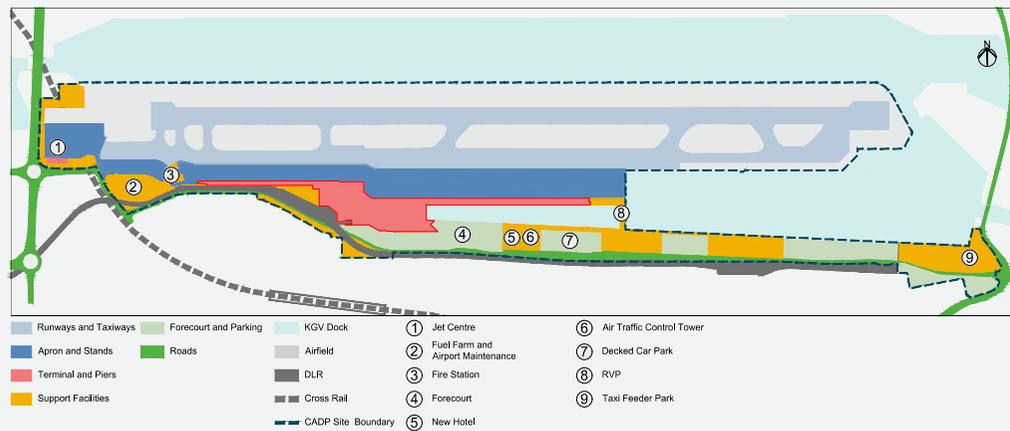


Figure A.2.3: Master Plan Phase 1

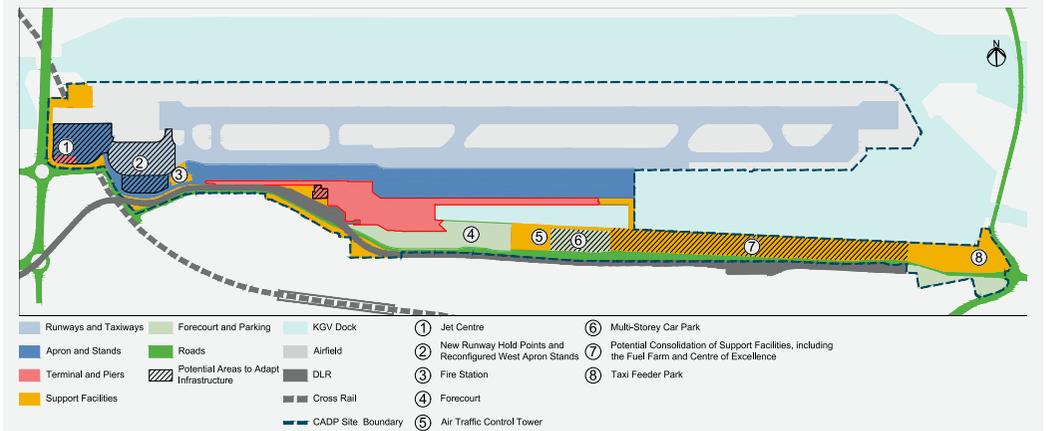


Figure A.2.4: Master Plan Phase 2

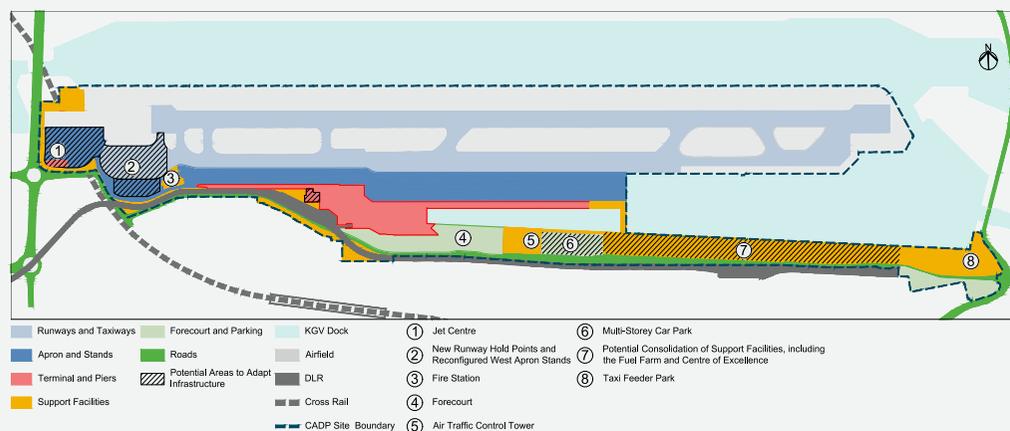
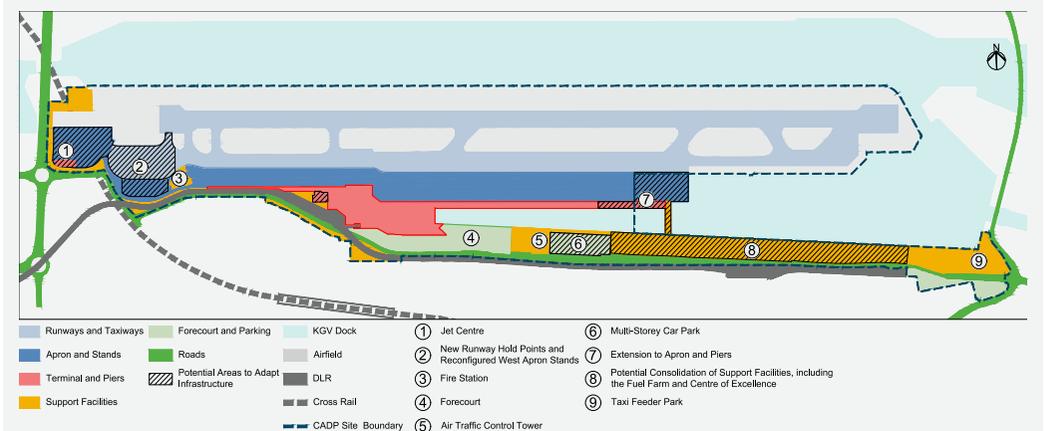


Figure A.2.5: Master Plan Phase 3



# A.3

## References

- 1 Full Time Equivalent (FTE)
- 2 Increase of around 2,700 FTEs compared to number of FTEs supported by the airport in 2019)
- 3 In 2019 the airport achieved carbon neutrality under the Airport Carbon Accreditation programme, Level 3+. The term 'carbon neutrality' includes the use of carbon offsetting where emissions cannot currently be eliminated. The term 'net zero carbon' does not rely on the use of offsets to achieve zero emissions
- 4 Sustainable transport includes public transport, walking, cycling, low and ultra-low emission vehicles and car sharing, as defined by the National Planning Policy Framework (NPPF), February 2019
- 5 Air Quality Action Plan 2019 – 2024, 18 November 2019
- 6 Figure equates to around 1,800 Full Time Equivalent jobs
- 7 Local area refers to 11 London boroughs of Newham, Tower Hamlets, Greenwich, Bexley, Lewisham, Southwark, Barking & Dagenham, Havering, Redbridge, Waltham Forest and Hackney, as well as Epping Forest District Council
- 8 Oxford Economics 2016, The role of London City Airport in facilitating business travel and trade
- 9 Full Time Equivalent jobs
- 10 At Level 4+ 'Transformation' of Airport Carbon Accreditation, airports are required to align their carbon management ambition with the global climate goals and define a long-term carbon management strategy oriented towards absolute emissions reductions. Stakeholder engagement is also strengthened and airports are required to demonstrate evidence of actively driving third parties towards delivering emissions reductions
- 11 The consortium's portfolio of airports in the UK and Europe includes Birmingham Airport, Bristol Airport, Copenhagen Airport and Brussels Airport. Other UK investments include Thames Water, BBC Television Centre Development, Scotia Gas and Associated British Ports
- 12 Public transport usage in 2019 included 64% DLR and 1% bus. 8% of passengers used Black Taxis which were traditionally classed as public transport by the airport but in line with the Mayor of London's Transport Strategy the classification of Black Taxis is currently being reviewed by the airport with a view to re-classifying Black Taxis, and other private hire vehicles as sustainable transport if low or ultra-low emissions
- 13 Figure based on most recently available travel data for 2019
- 14 Local area includes 11 London boroughs: Newham, Tower Hamlets, Greenwich, Bexley, Lewisham, Southwark, Barking & Dagenham, Havering, Redbridge, Waltham Forest and Hackney, as well as Epping Forest District Council
- 15 The Take off Into Work scheme, established in 2009, is a partnership between the airport and Newham Workplace, the London Borough of Newham's recruitment agency. The scheme provides Newham residents over the age of 18 with a variety of training, work experience and access to onsite jobs at the airport
- 16 CBI & Pearson 2018 – Educating for the Modern World
- 17 The airport's Annual Performance Report is published annually on the Consultative Committee website: [www.lcacc.org](http://www.lcacc.org)
- 18 Noise contours show areas affected by the air noise around airports. Similar to height contours on a map which show changes in ground levels over an area, the noise contours show areas where the noise is above a certain noise level. The contours depict average air noise levels over a 16-hour day, specifically determined from aircraft movements over the 3-month period from 16th June to 15th September
- 19 See: <https://www.londoncityairport.com/corporate/noise-and-track-keeping-system/noise-action-plan>
- 20 See: [monitoring.aqconsultants.co.uk/index.php/LCY](https://www.monitoring.aqconsultants.co.uk/index.php/LCY)
- 21 GLA 2017, Central Trend (population) London
- 22 Savills, 2018, London City Airport – Growth and Prospects in east London
- 23 <https://group.canarywharf.com/media/press-releases/canary-wharf-catalyst-for-30-years-of-growth-in-tower-hamlets-080218>
- 24 Canary Wharf Group PLC, n.d.
- 25 Canada Water Masterplan, 2018
- 26 Newham Council, 2018
- 27 Lend Lease, 2018
- 28 Royal Borough of Greenwich, 2019
- 29 Homes & Property UK, 2017
- 30 <https://www.gov.uk/government/speeches/beyond-the-crisis-speech-to-the-aviation-industry>
- 31 UK Aviation Forecasts, October 2017, Department for Transport, Central Case
- 32 Summary of Employee Jobs by Broad Industry Sector in London, 2009 to 2017, Office for National Statistics
- 33 The Mayor's Economic Development Strategy for London, December 2018, Mayor of London
- 34 Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England, June 2018, Department for Transport
- 35 See: <https://airspacechange.caa.co.uk>
- 36 Department for Transport, Beyond the Horizon, The Future of Aviation, Making Best Use of Existing Runways, June 2018
- 37 The legislation imposes a duty on the Secretary of State as to the level of the "net UK carbon account" (the amount of net UK emissions of targeted greenhouse gases for a period adjusted by the amount of carbon units credited or debited to the account) for the year 2050. The duty is to ensure that the net UK carbon account is lower than the "1990 baseline" (the baseline of net UK emissions of targeted greenhouse gases against which the percentage amount in subsection 1(l) is applied) by a minimum percentage amount. The amendment has the effect that the minimum percentage by which the net UK carbon account for the year 2050 must be lower than the 1990 baseline is increased from 80% to 100%
- 38 Single event 80 and 90 dB(A) SEL
- 39 Based on EASA certification noise levels
- 40 FTE growth compared to 2019
- 41 London City Airport has even more ambitious targets of 50% of new recruits being from Newham
- 42 Arup Analysis (2019). Note that these benefits include both local and national impacts which may not be fully mutually exclusive
- 43 <https://www.c2ecampaign.com>
- 44 Noise contours connect points that have the same average noise exposure. The contours are generated using computer models, based on the known characteristics of aircraft noise generation and attenuation, and calibrated using noise measurements from the airport's noise monitoring terminals
- 45 <https://travisicy.topsonic.aero>
- 46 [monitoring.aqconsultants.co.uk/index.php/LCY](https://www.monitoring.aqconsultants.co.uk/index.php/LCY)  
The populations have been determined using data supplied by CACI Ltd. This data is based on census information factored up to 2018 and consists of population by postcode. The forecast population within the 69 dB noise contour has been informed by a detailed modelling exercise that has been undertaken allowing for local screening from the airport's noise barriers and terminal buildings.
- 47 <https://www.londoncityairport.com/corporate/Action-Plans-and-Reports/Annual-Performance-report>
- 48 [https://www.sustainableaviation.co.uk/wp-content/uploads/2020/02/SustainableAviation\\_CarbonReport\\_20200203.pdf](https://www.sustainableaviation.co.uk/wp-content/uploads/2020/02/SustainableAviation_CarbonReport_20200203.pdf)
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- 50 <https://www.theecc.org.uk/publication/letter-international-aviation-and-shipping>
- 51 <https://www.gov.uk/government/speeches/aviation-update-27-february-2020>





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