Gatwick Airport Northern Runway Project

Needs Case

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1 Executive Summary

1.1.1 Government policy is clear about the critical importance of aviation to the nation's economic health and the UK's status in the world. The most up to date statement of policy explains that "*a central aspect of achieving our future ambitions will be to continue to enhance our global aviation impact. At the heart of aviation is facilitating travel internationally to connect people, goods and businesses across the globe. The UK will promote and improve its global connectivity to facilitate sustainable growth*." Consequently, *"The Government is committed to growth. We will work closely with industry to continually assess how we can best support sustainable recovery and a bright future for UK aviation."* [1]

1.1.2 However, the UK's aviation sector is capacity constrained. In 2012, aware of the severity of the issue and the damage to the UK that a lack of capacity causes, the Government appointed the Airports Commission to assess and recommend how capacity constraints could be addressed. The findings were unequivocal:

> "*Across all scenarios considered, including where the UK is meeting its climate change targets, there is significant growth in demand for aviation between now and 2050, placing additional pressure on already stressed airport infrastructure in London and the South East. The London airport system is forecast to be under very substantial pressure in 2030….problems are starting to emerge and are likely to get worse. Heathrow is effectively full. Gatwick is operating at more than 85% of its maximum capacity, and is completely full at peak times. Capacity constraints are making it more and more difficult for airports and airlines to operate efficiently*."[2]

1.1.3 However, more than a decade later, growth in demand has continued but little additional capacity has been consented, The Government's policy approach is clear:

> "*The UK now faces a significant capacity challenge. Heathrow Airport is currently the busiest two-runway airport in the world, while Gatwick Airport is the busiest single runway airport in the world. London's airports are filling up fast, and will all be full by the mid-2030s if we do not take action now."* [3]

1.1.4 The consequences of not taking action are recognised as damaging to the UK through a lack of opportunity for global connectivity but also for the impact capacity constraints have on the quality and efficiency of the UK's airports:

> *"Operating existing capacity at its limits means there will be little resilience to unforeseen disruptions, leading to delays. Fares are likely to rise as demand outstrips supply, and the lack of available slots makes it more difficult for new competitors to enter the market."*
>
> "*The Government believes that not increasing capacity will impose costs on passengers and on the wider economy*." [4]

[1] Flightpath to the Future, May 2022 pages 18 and 19.
[2] Interim report of the Airports Commission, Executive Summary.
[3] Airports NPS paragraph 2.11
[4] Airports NPS paragraph 2.15.

1.1.5 These issues are already apparent at Gatwick, which is the world's busiest daytime single runway airport and which experiences delays and operational constraints on a day to day basis, whilst suffering from a lack of resilience to cope with more abnormal events.

1.1.6 Despite these constraints, throughput at Gatwick grew by more than at any other UK airport in the 5 years to 2019 and, whilst the pandemic seriously affected Gatwick and all other airports, recovery has been rapid with a recovery to more than 80% of passenger numbers by the summer of 2022. At Gatwick, demand demonstrably exceeds supply – to the extent that there is a severe shortage of take off and landing slots, with 21 airlines allocated less than 40% of their requested demand. A secondary market has developed with slot premiums increasing and costs being passed on to passengers through increased fares, directly contrary to government objectives. These issues can only be addressed by consenting additional capacity at Gatwick.

1.1.7 Gatwick's network is the most extensive of all the London airports. In 2019 Gatwick served 219 destinations compared to 211 at Heathrow,185 at Stansted and 139 at Luton. Gatwick is the second ranked airport in the London system for long haul (non-Europe) connectivity with 62 destinations compared to 2 at Luton and 7 at Stansted. Gatwick Airport has become a key piece of national infrastructure, an economic engine for local and regional growth, and the airport of choice for millions of passengers.

1.1.8 In the absence of the Northern Runway Project (the NRP), Gatwick can achieve incremental growth (and the 2019 passenger throughput of 46mppa is forecast to grow to 62 mppa by 2038) but only with an increase in forecast delays and a continuing lack of resilience. Without the NRP these issues will not be addressed and Gatwick will fail to satisfy its inherent demand and to significantly contribute to the acute lack of capacity in the South-East.

1.1.9 The need for that capacity is already apparent and the extra capacity overdue. However, the need is forecast to intensify significantly. The forecasts set out in the Government's Jet Zero Strategy predict a growth of 70% in passenger demand between 2018 pre-pandemic levels and 2050[5]. The Jet Zero Strategy explains that the Government is determined to meet the challenge (and the opportunity) posed by the forecasts and is clear that to do so is not incompatible with the Government's climate change commitments, because a comprehensive set of measures is in place to secure a reduction in aviation's carbon emissions. The scale of the forecasts, however, means that best use must be made of all airport infrastructure, and that there is an immediate need for increased capacity, which cannot be met by other projects.

1.1.10 The NRP is an innovative means of achieving additional runway capacity for Gatwick, for the South-East and for the UK without the scale of land take and associated impacts normally associated with providing a new additional runway. It can also be provided relatively quickly, with the NRP forecast to be operational in 2029, in time to meet forecast demand for 2030 and well ahead of any third runway at Heathrow or the more limited capacity gain proposed for the later 2030s at Luton.

1.1.11 The NRP would bring a wealth of operational benefits to Gatwick and would unlock demand for growth at the airport which is already apparent. It would also serve to reinforce the role which Gatwick plays nationally and at the centre of the local economy. By the time the runway is fully

[5] https://www.gov.uk/government/publications/jet-zero-strategy-delivering-net-zero-aviation-by-2050

operational in 2032, it will create a net increase in employment of 14,000 jobs and create an extra £1bn in GVA across the sub-regional Six Authorities area.

1.1.12 It will also significantly boost tourism's contribution to GDP by nearly £2bn and support a further 26,000 jobs.

1.1.13 The economic cost-benefit analysis shows that the scheme's benefits significantly outweigh its costs (including environmental and carbon costs) with a Net Present Value (NPV) of around £10bn in addition to substantial non-monetised employment and trade-related benefits.

2 Introduction

2.1.1 London Gatwick Airport (Gatwick) has become a key piece of national infrastructure, an economic engine for local and regional growth, and the airport of choice for millions of passengers. It is the 8th busiest passenger airport in Europe[6], with the 7th largest long haul network and ranked 6th for total number of long haul and short haul destinations served[7]. In 2019 Gatwick served 177 short haul destinations ranking it 7th in Europe and 2nd in the UK.

2.1.2 Until 2015, Gatwick was the world's busiest single runway airport as measured by passengers and still has the world's busiest single runway operation during the day, routinely scheduling 55 aircraft movements per hour.[8] Additional capacity is needed to enhance the operation of the airport, add resilience and meet forecasts of demand.

2.1.3 Gatwick has experienced a sustained period of growth since changing ownership in 2009, with passenger numbers increasing from 31 million a year to more than 46 million in 2019. In 2019 Gatwick had 283,000 commercial air traffic movements (ATMs).

2.1.4 Since 2009, £2.55bn has been invested in the airport's facilities to improve Gatwick's passenger experience, airport efficiency and surface access connections and facilities. As a result of the Covid-19 pandemic, projects in Gatwick's investment programme were paused but investment has now recommenced to provide further improvements and facilities to enhance Gatwick's operation.

2.1.5 As well as its main runway, Gatwick also has an emergency / standby runway located to the north of the main runway. The separation distance between the two runways means that they cannot be used at the same time. Granted planning permission in 1979, its use is restricted to when the main runway is not available for operations. This can occur, for example, in an emergency situation but the operation of the northern runway is not easily 'switched on' at short notice and, therefore, it is most commonly used whilst planned essential repairs and maintenance work is carried out on the main runway. The northern runway was used for 2,842 air traffic movements (ATMs) in 2019.

2.1.6 Gatwick Airport Limited (GAL) – the owner and operator of Gatwick - is now seeking permission for a major new project **- the 'Northern Runway Project'** (the Project) - that will enable dual runway operations from the existing main and northern runways.

2.1.7 The project is an innovative and sustainable way of adding additional capacity to Gatwick, through making use of the existing northern runway by shifting its centreline north so that the two runways can be used together. Importantly dual runway operations are enabled without requiring the significant additional land take that would be required if a full second runway was to be developed.

2.1.8 The Project is expected to become operational in 2029 ready to meet demand for additional capacity that cannot be provided on the main runway. It is anticipated that by 2038, the Project

[6] ACI (Airports Council International), 2019
[7] OAG Schedules, 2019
[8] In 2018, Mumbai International Airport created a new world record for single-runway operations handling 980 arrivals and departures in 24 hours Add source

would enable Gatwick to serve 75.6 million passengers with 382,000 commercial ATMs, and 80.2 million passengers with 386,000 ATMs per annum in 2047.

2.1.9 The proposed development will increase Gatwick's capacity by approximately 13 million passengers per annum (mppa) and will also provide for major improvements to the surrounding strategic road network and main accesses serving Gatwick's North and South Terminals. For these reasons it is a Nationally Significant Infrastructure Project (NSIP) requiring consent through a Development Consent Order pursuant to the Planning Act 2008.

2.1.10 The Project will offer important benefits - contributing towards meeting increased demand in the UK for air travel, including catering for more Gatwick-specific demand within the airport's catchment markets; securing improved resilience of operations at Gatwick and in the London airports system and improved operational performance at Gatwick. The Project will generate national, regional and local economic benefits through increased employment and new business opportunities through increased global connections. It will also ensure that best use is made of the existing airport facilities, in line with UK government aviation policy.[9]

2.1.11 Figure 2.1.1 provides a summary of the Project, whilst Figure 2.1.2 explains how the main and northern runway would operate together.

Figure 2.1.1 - The Northern Runway Project

The Northern Runway Project

The Northern Runway Project involves bringing the existing northern runway, which is currently restricted to use as a standby/emergency runway, into routine operation alongside continued use of the main runway.

The Project proposes alterations to the northern runway which, together with the lifting of the current restrictions on its use, would enable dual runway operations.

The Project also includes the development of a range of infrastructure and facilities, largely within the confines of the existing airport boundary, but also including major road enhancements to improve access to Gatwick.

The proposals include:

- alterations to the existing northern runway, including repositioning its center line 12 meters further north to enable dual runway operations;
- reconfiguration of taxiways;
- pier and stand amendments (including a proposed new pier);
- reconfiguration of other airfield facilities;
- extensions to the North and South Terminals;
- provision of additional hotels and office space;
- provision of reconfigured car parking, including new surface and multi-storey car parks;
- surface access (highway) improvements;

[9] Beyond the Horizon –the future of UK Aviation, 2018: https://www.gov.uk/government/publications/aviation-strategy-making-best-use-of-existing-runways

- reconfiguration of existing utilities, including surface water, foul drainage and power; and
- landscape/ecological planting and environmental mitigation.

It is anticipated that by 2038, the additional capacity added by the project would enable Gatwick to serve 75.6 million passengers with 382,000 commercial ATMs per annum and in 2047 80.2 million passengers with 386,000 ATMs.

Figure 2.1.2 - How the runways would operate together

How the runways would operate together

The Northern Runway Project would bring the existing northern runway into routine use alongside our main runway. The changes we are proposing would mean the following for runway operations at the airport:

- all arriving flights would use the existing main runway;
- departing flights would be shared between the existing main runway and the northern runway, with the northern runway being used mainly for smaller aircraft (less than but including Code C[10]; and
- there would be controlled dependency between the two runways to enable safe crossing of the northern runway by arrival flights.

2.1.12 The full project description is provided in Chapter 5 of the Environmental Statement (the ES).

[10] For example, Airbus A320 and Boeing 737 sized aircraft

2.1.13 This report sets out the need for and key benefits of the Project. It is structured as follows:

- Chapter 3 Policy Context - explains the national, regional, and local policy context;
- Chapter 4 The Airport's Recent Growth and Current Operations;
- Chapter 5 Need for Growth at Gatwick in response to Passenger Demand;
- Chapter 6 Future Demand Forecasts;
- Chapter 7 Resilience and Operational Benefits;
- Chapter 8 Economic Benefits

2.1.14 This Need Case is submitted in support of the application for development consent.

3 Policy Context

3.1. Introduction

3.1.1 Government policy is consistently supportive of aviation growth given the importance of aviation to the UK economy.

3.1.2 The most recent expression of aviation policy is set out in Flightpath to the Future, May 2022 which sets a strategic framework for aviation over the next 10 years, including its recovery from the effects of the pandemic. The Ministerial Foreword explains:

"Having endured the worst crisis in its history, now is the right time for UK aviation to look to the future. We will work hand-in-hand with the industry to help it grow and return to pre-pandemic levels of demand and profitability. That means supporting airport expansion where it's justified, to boost our global connectivity and level up the UK. But it also means committing to a much greener future. UK aviation can play a pioneering role in decarbonising air travel, and hence earn the right to grow."

3.1.3 The document explains (page 18) that "*a central aspect of achieving our future ambitions will be to continue to enhance our global aviation impact. At the heart of aviation is facilitating travel internationally to connect people, goods and businesses across the globe. The UK will promote and improve its global connectivity to facilitate sustainable growth*."

3.1.4 Against that background, the policy document is clear:

"The Government is committed to growth. We will work closely with industry to continually assess how we can best support sustainable recovery and a bright future for UK aviation." (p.19)

"Airports are part of the UK's thriving and competitive aviation sector and play a critical role in boosting both global and domestic connectivity and levelling up in the UK. Airport expansion also plays a key role in this and the Government remains supportive of airport expansion where it can be delivered within our environmental obligations. The Government is supportive of airports bringing forward expansion plans by way of our existing policy frameworks for airport planning. These policy frameworks continue to have full effect, for example, as a material consideration in decision-taking on applications for planning permission." (p.26)

3.1.5 The 'policy frameworks' referred to are reviewed below. Collectively with Flightpath to the Future, they provide the Government's up to date policy position in relation to aviation.

3.2. Aviation Policy Framework, March 2013

3.2.1 The Aviation Policy Framework (APF) continues to provide the framework for national aviation policy. The Government's continued commitment to the APF demonstrates the enduring importance of aviation to the national economy. This is made clear in the APF and the Executive Summary explains that: the Government's primary objective is to achieve long term economic growth; that the aviation sector is a major contributor to the economy and that the Government supports its growth within a framework which maintains a balance between the benefits of

aviation and its costs, particularly its contribution to climate change and noise. As a result, the Executive Summary continues (para 9):

"One of our main objectives is to ensure that the UK's air links continue to make it one of the best connected countries in the world. This includes increasing our links to emerging markets so that the UK can compete successfully for economic growth opportunities. To achieve this objective, we believe that it is essential both to maintain the UK's aviation hub capability and develop links from airports which provide point-to-point services (i.e. carrying few or no transfer passengers). This should be done in a balanced way, consistent with the high-level policies set out in this document and acknowledging Government's commitment to economic growth."

3.2.2 The importance of the aviation sector is explained at paragraph 1.2 of the APF:

"1.2 We believe that aviation infrastructure plays an important role in contributing to economic growth through the connectivity it helps deliver. For example, it provides better access to markets, enhances communications and business interactions, facilitates trade and investment and improves business efficiency through time savings, reduced costs and improved reliability for business travellers and air freight operations."

3.2.3 In the light of this, the APF explains that a key priority is to work with the aviation industry and other stakeholders to make better use of existing runway capacity at all UK airports (Executive Summary paragraph 10). Paragraph 1.24 confirms that "*the Government wants to see the best use of existing airport capacity*" and paragraph 1.60 of the APF summarises the Government's strategy, as follows:

"*Taking into account responses to the scoping document, our strategy is based on a suite of measures focused on:*

● *making best use of existing capacity to improve performance, resilience and the passenger experience;*

● *encouraging new routes and services;*

● *supporting airports outside the South East to grow and develop new routes; and*

● *better integrating airports into the wider transport network*."

3.2.4 In the medium and long term (beyond 2020) the APF recognises that there will be a capacity challenge at all of the biggest airports in the South-East of England and that, for this reason, the Government established the Airport's Commission in 2012 to examine how the UK's aviation status could be maintained.

3.2.5 The final report of the Airport's Commission was published in July 2015. Its recommendations were accepted by the Government and have informed the development of subsequent government aviation policy. As set out below, the requirement to make best use of existing airport infrastructure has remained a consistent thread of aviation policy.

3.3. Airports National Policy Statement, June 2018

3.3.1 The Airports National Policy Statement (ANPS) endorsed the critical importance of aviation to the national economy but explained:

"However, London and the South East are now facing longer term capacity problems. Heathrow Airport is operating at capacity today, Gatwick Airport is operating at capacity at peak times, and the whole London airports system is forecast to be full by the mid-2030s."

3.3.2 The ANPS sets out government policy for expanding airport capacity in the South-East of England, in particular by developing a north-west runway at Heathrow Airport. Paragraph 1.41 of the ANPS makes clear that it does not "have effect" in relation to an application for development consent for airport development not comprised in an application relating to the Heathrow North-West runway but states that the ANPS will nevertheless be both important and relevant in the determination of any such application. Paragraph 1.38 of the ANPS makes clear that "*other government policy on airport capacity has been set out in the APF and that the ANPS does not affect government policy on wider aviation issues, for which the 2013 APF and any subsequent policy statements still apply."*

3.3.3 In that context, the ANPS explains at paragraph 1.42:

"As indicated in paragraph 1.39 above, airports wishing to make more intensive use of existing runways will still need to submit an application for planning permission or development consent to the relevant authority, which should be judged on the application's individual merits. However, in light of the findings of the Airports Commission on the need for more intensive use of existing infrastructure as described above, the Government accepts that it may well be possible for existing airports to demonstrate sufficient need for their proposals, additional to (or different from) the need which is met by the provision of a Northwest Runway at Heathrow Airport."

3.3.4 Based on the findings of the Airport's Commission, the ANPS recognises that challenges exist in the UK aviation sector, stemming in particular from capacity constraints which "*create negative impacts on the UK through increased risk of flight delays and un-reliability, restricted scope for competition and lower fares, declining domestic connectivity, erosion of the UK's hub status relative to foreign competitors and constraining the scope of the aviation sector to deliver wider economic benefits."* (paragraph 2.10).

3.3.5 The ANPS recognises from paragraph 2.11 that:

"The UK now faces a significant capacity challenge. Heathrow Airport is currently the busiest two-runway airport in the world, while Gatwick Airport is the busiest single runway airport in the world. London's airports are filling up fast, and will all be full by the mid-2030s if we do not take action now."

"Aviation demand is likely to increase significantly between now and 2050. All major airports in the South East of England are expected to be full by the mid-2030s, with four out of five full by the mid-2020s. By 2050 demand at these airports is expected to outstrip capacity by at least 34%, even on the department's low demand forecast. There

is relatively little scope to redistribute demand away from the region to less heavily utilised capacity elsewhere in the country."

"The consequences of not increasing airport capacity in the South East of England – the 'do nothing' or 'do minimum scenarios' – are detrimental to the UK economy and the UK's hub status."

3.3.6 An additional concern arising from the lack of aviation capacity relates to the lack of resilience in the airports system. As paragraph 2.15 the ANPS explains:

"Operating existing capacity at its limits means there will be little resilience to unforeseen disruptions, leading to delays. Fares are likely to rise as demand outstrips supply, and the lack of available slots makes it more difficult for new competitors to enter the market."

"The Government believes that not increasing capacity will impose costs on passengers and on the wider economy."

3.4. Beyond the Horizon - The Future of UK Aviation – making best use of existing runways, June 2018

3.4.1 Beyond the Horizon, often referred to as Making Best Use or MBU, was published at the same time as the ANPS and relates to airport capacity apart from the North-West Runway at Heathrow. It explains:

"The government's 2013 Aviation Policy Framework provided policy support for airports outside the South East of England to make best use of their existing airport capacity. Airports within the South East were to be considered by the newly established Airports Commission."

"The Airports Commission's Final Report recognised the need for an additional runway in the South East by 2030 but also noted that there would be a need for other airports to make more intensive use of their existing infrastructure." (paragraphs 1.1 and 1.2)

3.4.2 As a result, the policy document is clear:

"Therefore the government is supportive of airports beyond Heathrow making best use of their existing runways. However, we recognise that the development of airports can have negative as well as positive local impacts, including on noise levels. We therefore consider that any proposals should be judged by the relevant planning authority, taking careful account of all relevant considerations, particularly economic and environmental impacts and proposed mitigations." (paragraph 1.29)

3.4.3 Further consistent support is provided in the Government's emerging Aviation Strategy, a consultation for which was published in December 2018.

3.5. Aviation 2050: Green Paper, December 2018 – a consultation

3.5.1 The ministerial Foreword to the consultation leaves no room or doubt about the importance which the Government attaches to aviation and its continued growth, as follows:

"Aviation has long been at the heart of the United Kingdom's economic success. From its earliest days, flight has helped forge international trade links and created vital domestic connections enabling our country to flourish. Today we have the largest aviation network in Europe and the third largest in the world, an industry that contributes at least £22 billion to the UK economy, along with over 230,000 jobs.

The industry is also growing at a rapid rate to meet rising demand. Passenger numbers have been increasing for seven consecutive years, and it's estimated that UK passenger traffic could soar from 284 million last year to 435 million by 2050. As Aviation Minister I have been hugely impressed by the sector's ambition and innovation. In recent months we've seen the opening of a new terminal building at Luton Airport, the launch of new flights between Manchester and Mumbai, and Birmingham Airport's announcement of a £500 million expansion plan to boost capacity and improve facilities. In London and the South East our airports are nearly full, and earlier this year we supported the crucial Northwest runway at Heathrow after achieving an overwhelming parliamentary majority for the Airports National Policy Statement. Clearly this growth benefits the UK. A thriving aviation sector is tangible evidence of economic confidence, growing tourism, increased trade, and business investment. Our regional airports and the connections, jobs, and investment they provide spread these benefits across the country."

3.5.2 The consultation is clear on the benefits which government attaches to a strong aviation sector:

"Aviation is important for the government's goal of building a global and connected Britain. The UK already plays a prominent role on the world stage with the biggest international aviation network in Europe and currently the third largest in the world. Through the Aviation Strategy the UK will be equipped to build new connections in rapidly growing aviation markets, and to use the leverage we have internationally to pursue our objectives on environmental measures and liberalisation."

"Air travel benefits our lives and opens us up to the world." (Executive summary page 13)

3.5.3 Those benefits include the benefits of international connectivity:

"1.5 Air travel benefits most of us, either directly or indirectly. For many people, it is the means by which they can enjoy a well-earned holiday. It is important for maintaining social and family ties with loved ones who may be based across the world. Business air travel also brings trade and investment to the UK, generating prosperity."

"1.7 Aviation is also vital to how the UK is connected to the global economy. The UK's aviation network is connected to a vast number of international locations accessible through airports across the country. This helps to maintain important social and cultural

links and is vital for facilitating an environment for businesses to engage in international opportunities."

3.6. Flightpath to the Future, May 2022

3.6.1 As set out above, the Government's most recent aviation policy is set out in Flightpath to the Future, published in 2022. The text at the start of this chapter explains the Government's continuing support for the sustainable growth of aviation capacity. The policy document explains:

"This strategic framework focuses on four key themes, including:

- *Enhancing global impact for a sustainable recovery*
- *Embracing innovation for a sustainable future*
- *Realising benefits for the UK*
- *Delivering for users.*

These themes are underpinned by a ten point plan. The plan highlights key priority areas which will help deliver the Government's commitment to growth, as well as supporting a modern, sustainable, and innovative sector for the future. The themes and the associated ten point plan provide a framework for delivery. They identify the issues and opportunities facing the sector and provide certainty, both to industry and individuals, on how the Government and the sector can work together to meet these challenges head on."

3.6.2 In relation to the first key theme, the policy explains:

Enhancing global impact for a sustainable recovery

"The Government is committed to growth in demand and working with industry to ensure we enable the sector to recover. We want the aviation sector to build back better, alongside supporting a greener future, and more sustainable growth." (p.6)

"Support growth in airport capacity where it is justified, ensuring that capacity is used in a way that delivers for the UK – airport expansion has a key role to play in enhancing the UK's global connectivity and we remain supportive of sustainable airport growth. We will also support the sector to drive forward continued quality improvements, so slot capacity is used effectively and delivers the best possible results for the UK." (p.9)

"A central aspect of achieving our future ambitions will be to continue to enhance our global aviation impact. At the heart of aviation is facilitating travel internationally to connect people, goods, and businesses across the globe. The UK will promote and improve its global connectivity to facilitate sustainable growth, as well as embracing UK aviation strengths and competitive advantage to deliver our ambitions to incentivise UK trade and investment opportunities." (p18)

3.6.3 Flightpath to the Future makes clear that airport growth is supported, but only where it is consistent with the Government's environmental objectives. The document also makes clear that the two objectives can be compatible. The Ministerial Foreword makes clear that "*we don't believe aviation must decline for us to meet our climate change targets"* and that the Government is acting quickly and decisively to put the industry on a green trajectory. This approach aligns directly with Gatwick's own commitments, which are elaborated elsewhere in the DCO application, but it is important to establish in this Chapter that the Government does not see a conflict between its policies for airport and aviation expansion and its environmental commitments.

3.6.4 This approach is also apparent in the Government's most recent publication relating to the noise impact of aviation (the Overarching Aviation Noise Policy, March 2023) [11], which sets out how adverse effects are to be limited but then balanced against the benefits of aviation:

"*An overall reduction in total adverse effects is desirable, but in the context of sustainable growth an increase in total adverse effects may be offset by an increase in economic and consumer benefits*."

3.7. Decarbonising transport – a Better, Greener Britain, (July 2021) [12]

3.7.1 This document, often referred to as the Transport Decarbonisation Plan (the TDP) was published by the Department for Transport in July 2021. It sets out the Government's plan for how the UK's transport sector will meet transport's contribution to legally binding carbon budgets and delivering net zero by 2050. In relation to aviation, the TDP is clear that:

"*International connectivity is a vital part of Global Britain, and everyone should continue to have access to affordable flights, allowing them to go on holiday, visit family, and do business. But as the aviation sector recovers, a process likely to take several years, it must do so in a lower-carbon way*." (Foreword from the Secretary of State)

3.7.2 More detail of how that plan is to be achieved and delivered is set out in the Government's Jet Zero Strategy.

3.8. Jet Zero Strategy: delivering net zero aviation by 2050; July 2022

3.8.1 Planning policies in relation to carbon and climate change are reported and considered elsewhere in the application. For the purposes of understanding how those policies may affect government policy relating to the need for aviation capacity, however, it is helpful to examine the way in which these matters are addressed in the Government's Jet Zero Strategy.

3.8.2 Consistent with the Government's commitments under the Climate Change Act, 2008, the Jet Zero Strategy commits the aviation sector to achieve net zero emissions by 2050 ('Jet Zero'). The Strategy recognises that this is a challenging commitment but explains:

*"**Meeting this challenge is vital for UK connectivity and growth**. The Government recognises the aviation sector's role in making us one of the world's best-connected and most successful trading nations. We are committed to enabling the recovery of the*

[11] https://www.gov.uk/government/publications/aviation-noise-policy-statement/overarching-aviation-noise-policy
[12] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf

sector to support our levelling up agenda through regional connectivity and to strengthen ties within the Union, as well our connectivity globally. We need solutions that reduce the sector's emissions whilst delivering economic benefits across the UK." (Executive Summary, page 7)

3.8.3 Accordingly, the Strategy sets out wide ranging initiatives and objectives to decarbonise the sector, at the same time as continuing to encourage its growth. The Strategy explains:

"3.56 The Government remains committed to growth in the aviation sector and working with industry to ensure a sustainable recovery from the pandemic. In our recently published strategic framework for the future of aviation – 'Flightpath to the Future' – we recognise that airport expansion has a role to play in realising benefits for the UK through boosting our global connectivity and levelling up. The framework is clear that we continue to be supportive of airport growth where it is justified, and our existing policy frameworks for airport planning provide a robust and balanced framework for airports to grow sustainably within our strict environmental criteria. We have also been clear expansion of any airport in England must meet our climate change obligations to be able to proceed."

3.8.4 The supporting analytical documents are extensive and were themselves the subject of consultation. They show that the Strategy was informed by an updated set of DfT passenger demand forecasts. The further technical information released by the Government in 2022 in the preparation of the Strategy, is helpful in demonstrating that aviation can continue to grow in response to demand, whilst remaining consistent with climate change policy. In particular, using a core or mid case scenario for economic growth and carbon pricing:

- it forecasts the growth in air passengers taking into account a range of factors, including that airlines will need to pay for the forecast increased costs of carbon;
- those forecasts nevertheless show a growth in passenger numbers of 70% between 2018 and 2050; and
- the airport capacities assumed in the Government's assessment in support of Jet Zero incorporate known airport expansion plans/commitments, including the third runway at Heathrow and the NRP at Gatwick, for the latter of which it assumes a maximum capacity of 386,000 air transport movements, consistent with Gatwick's own assessment[13].

3.8.5 The consequence of this is explained in the Jet Zero Strategy, i.e. that achievement of the Strategy is not inconsistent with the published expansion plans of airports:

"Our approach to sustainable growth is supported by our analysis (set out in the supporting analytical document) which shows that ***we can achieve Jet Zero without the Government needing to intervene directly to limit aviation growth.*** *The analysis uses updated airport capacity assumptions consistent with the latest known expansion plans at airports in the UK. The analysis indicates that it is possible for the potential carbon emissions resulting from these expansion schemes to be accommodated within the planned trajectory for achieving net zero emissions by 2050,*

[13] Jet Zero: Modelling Framework, Annex D. March 2022.

and consequently that our planning policy frameworks remain compatible with the UK's climate change obligations." (paragraph 3.57)

3.8.6 This was apparent, for instance, in the most recent decision made by the Secretary of State in relation to airport development – the decision of 18 August 2022 to grant DCO consent to proposals at Manston Airport [14], in which the Secretary of State made clear:

"149. …..the Secretary of State is satisfied that Government's Transport Decarbonisation Plan and the Jet Zero Strategy, which set out a range of non-planning policies and measures that will help accelerate decarbonisation in the aviation sector, will ensure Government's decarbonisation targets for the sector and the legislated carbon budgets can be met without directly limiting aviation demand."

3.9. Local Aviation Policy

3.9.1 The **Planning Statement** (Doc Ref. 7.1) addresses all relevant local planning policy, whilst **ES Appendix 17.2.1**: **Summary of Local Plan Policies – Socio-Economics** (Doc Ref. 5.3) records local and regional economic policies relevant to Gatwick Airport.

3.9.2 The need for expansion of Gatwick Airport and aviation generally, however, is a matter for national policy and paragraph 5 of the NPPF sets out that:

"The Framework does not contain specific policies for nationally significant infrastructure projects. These are determined in accordance with the decision making framework in the Planning Act 2008 (as amended) and relevant national policy statements for major infrastructure, as well as any other matters that are relevant (which may include the National Planning Policy Framework). National policy statements form part of the overall framework of national planning policy, and may be a material consideration in preparing plans and making decisions on planning applications."

3.9.3 Local planning policy could be important and relevant for decisions on DCO applications made under the Planning Act but those policies are more likely to be relevant where they address specific local matters not covered in national aviation policy. As the government policy document Beyond the Horizon (The Future of UK Aviation – making best use of existing runways, June 2018) explains from paragraph 1.11, local authorities have an important role to play in local issues but "*there are, however, some important environmental elements which should be considered at a national level.*"

3.9.4 Seen in that context, it is appropriate to record that the Crawley Local Plan, 2015 "*has been prepared on the basis of supporting the growth of Gatwick Airport to a throughput of 45 million passengers per annum within its current configuration of a single runway and two terminals*" (paragraph 1.37) and recognises that any decision about the significant growth of the airport (such as a second runway) would be a matter for government policy (paragraphs 1.38 and 9.5).

3.9.5 The importance of Gatwick to the Crawley and wider economy is recognised in the Local Plan:

[14] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-006369-220818%20-%20Manston%20Airport%20PA08%20Decision%20Letter.pdf

"Much of Crawley's development opportunities and pressures are determined by its role within the Gatwick Diamond and the wider economic sub-region. With Gatwick Airport as the economic core, the borough offers the focus for large businesses, travel and retail provision." (paragraph 2.6)

"The economy of Crawley is buoyed by the presence of Gatwick Airport. 75% of Crawley's employment (by employment numbers) is in distribution, hotels, transport, communications, banking and finance of which Gatwick Airport accounts for approximately 25,000 jobs directly. Crawley is the main place of residence for airport employees with 26.9% of the workforce living in Crawley." (paragraph 2.15)

3.9.6 However, the Local Plan (and the emerging Local Plan Review) recognises that strategic decisions about the airport's future are a matter for government policy.

4 Gatwick's Recent Growth and Current Operations

4.1. Passenger Numbers, Air Traffic Movements and Recent Growth

4.1.1 In 2019, the last year of full operations prior to the COVID-19 pandemic, Gatwick Airport handled some 283,000 commercial Air Transport Movements (ATMs), serving over 46.6m passengers travelling to 219 destinations with 53 different airlines.

4.1.2 The COVID-19 pandemic had a very severe impact on the global aviation industry. In 2020, Gatwick, along with all other UK airports, experienced a significant reduction in passenger traffic levels because of both Government-imposed restrictions on air travel and reduced passenger demand driven by low consumer confidence. UK passenger volumes for the calendar year 2020 were 75% down on volumes for 2019 (75 mppa[15] v 300 mppa), with passenger numbers at Gatwick reduced from 46.6 mppa in 2019 to 10.2 mppa in 2020.

4.1.3 Following the removal of the UK's travel restrictions in April 2022, however, airline capacity and passenger demand returned to Gatwick and other UK airports. During summer 2022 passenger demand at Gatwick had recovered to over 80% of 2019 levels, which was in line with the wider UK market. Capacity and demand would have been higher had it not been for some ongoing travel restrictions in other markets / countries (for example, travel restrictions, COVID testing and quarantining requirements imposed in countries such as China). Resourcing challenges were faced across the UK aviation industry as a result of manpower that was lost at airports during the pandemic that meant airports/airlines were unable to fulfil the returning demand. Global air travel is now virtually fully open, with just a handful of countries continuing to have travel restrictions in place, whilst the resourcing issues that faced the UK air industry have now been substantially addressed. In line with industry wide forecasts.[16] GAL is confident passenger and airline traffic levels at Gatwick will return to 2019 pre-COVID-19 levels by 2025 and then continue to grow thereafter with, the pandemic not having any material long term effect on aviation growth rates.

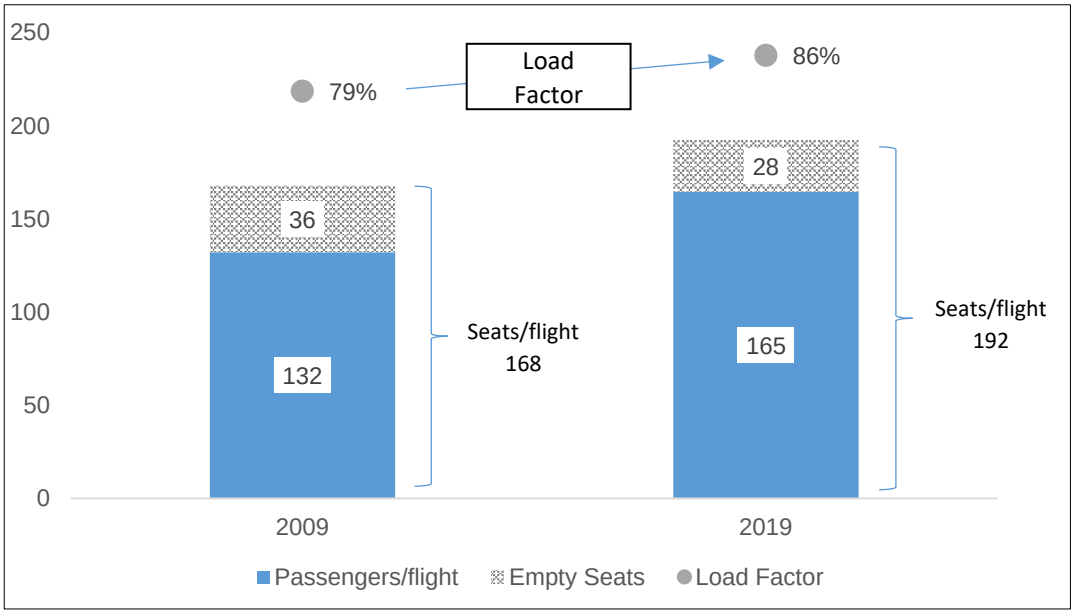
4.1.4 Today, Gatwick is able to declare a maximum of 55 scheduled aircraft movements an hour on its main runway. This has grown from 53 an hour in 2012. With this declared limit on scheduled operations already being reached at busy times of the day and year, Gatwick has no spare capacity to increase aircraft operations at peak times of the day across much of the year and is therefore unable to fulfil demand from airlines for additional services at peak times.

4.1.5 Despite operating with this high degree of capacity constraint, Gatwick has still been able to offer significant levels of annual passenger growth in the years before the COVID-19 pandemic. This was characterised by three main factors:

1. **More passengers per flight:** Average passengers per aircraft movement grew from 132 in 2009 to 165 in 2019. This was driven by higher load factors (the percentage of seats filled), and an increase in the average size (and therefore number of seats) of aircraft used.

[15] mppa, million passengers per annum
[16] For example, IATA, ACI, Eurocontrol assume similar recovery timescales for the wider European market

Figure 4.1-1 - Gatwick Growth in Average Aircraft Size & Load Factor

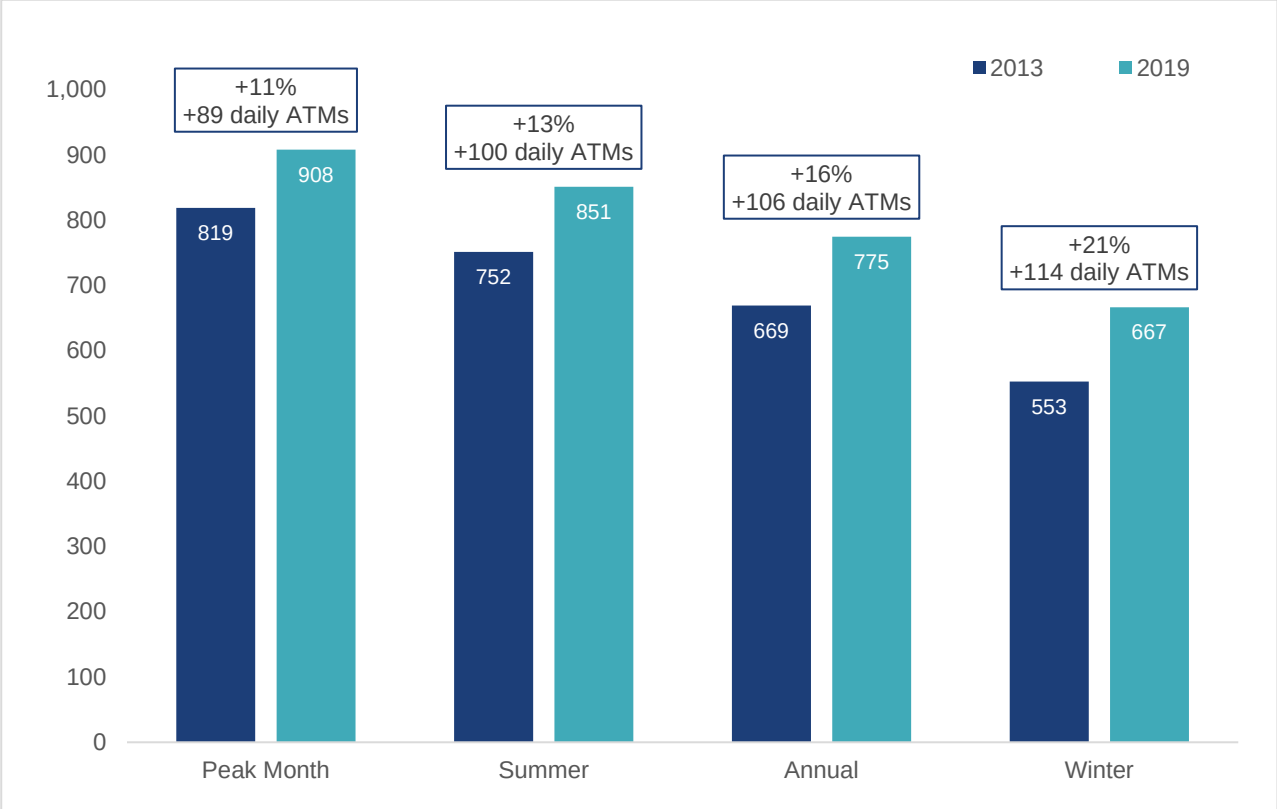


Source: CAA/GAL Statistics

2. **Peak spreading:** There has been a change in the profile of flights over the years, with a higher level of growth in the traditionally quieter periods of the year. This 'peak spreading' makes use of spare capacity on the runway outside of peak months and leads to a higher level of annual utilisation of the existing assets on the airport. Gatwick is still busier in the summer months than the winter months and we see further potential for this peak spreading to continue.

   The following chart highlights how Gatwick's demand has been spreading across the year. Between 2013 and 2019 the number of daily movements in the peak months have only grown 11% reflecting the relatively limited capacity available in these periods, whilst off peak periods have grown at a greater rate. For example, the winter period has seen activity increase 21% in the same period.

Figure 4.1-2 – Gatwick Avg. Daily ATMs (2013 & 2019)

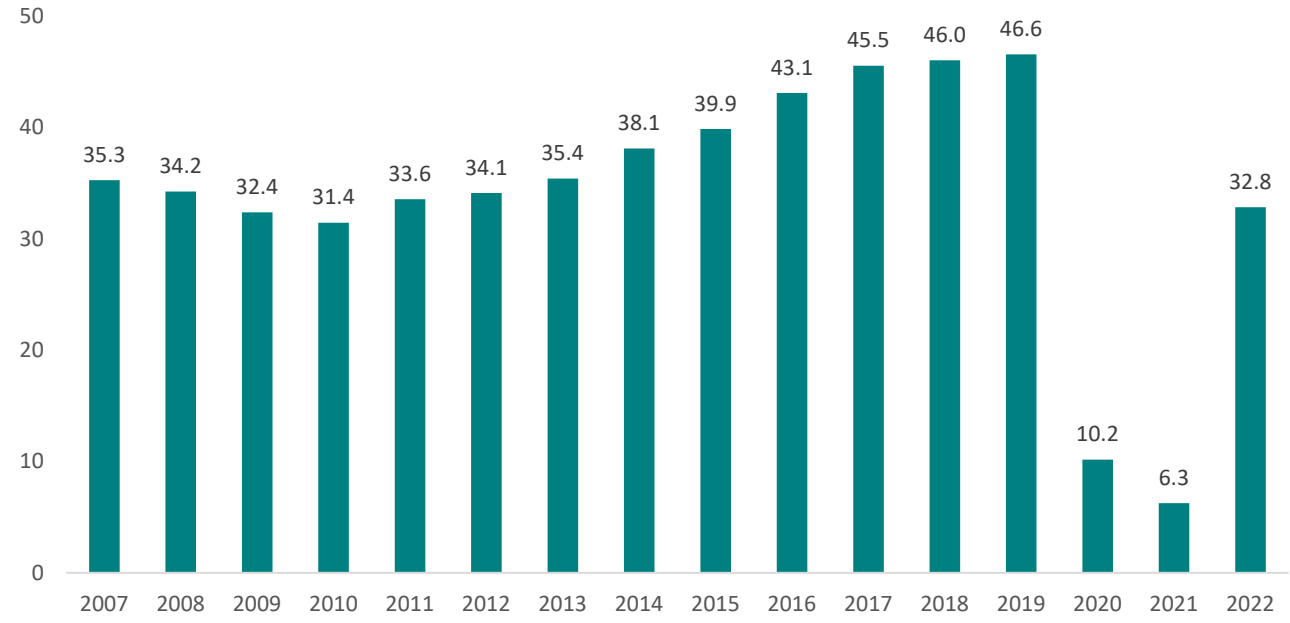


3. **Growth in peak runway capacity:** The maximum number of scheduled aircraft movements that can be accommodated on the main runway has grown from 53 an hour in 2012 to 55 an hour in 2019. This increase has allowed more flights, even during the busy summer period.

4.1.6 Over the decade to 2019, Gatwick's passenger numbers grew by over 14 million. This 44% growth in passengers resulted from 15% growth of ATMs.

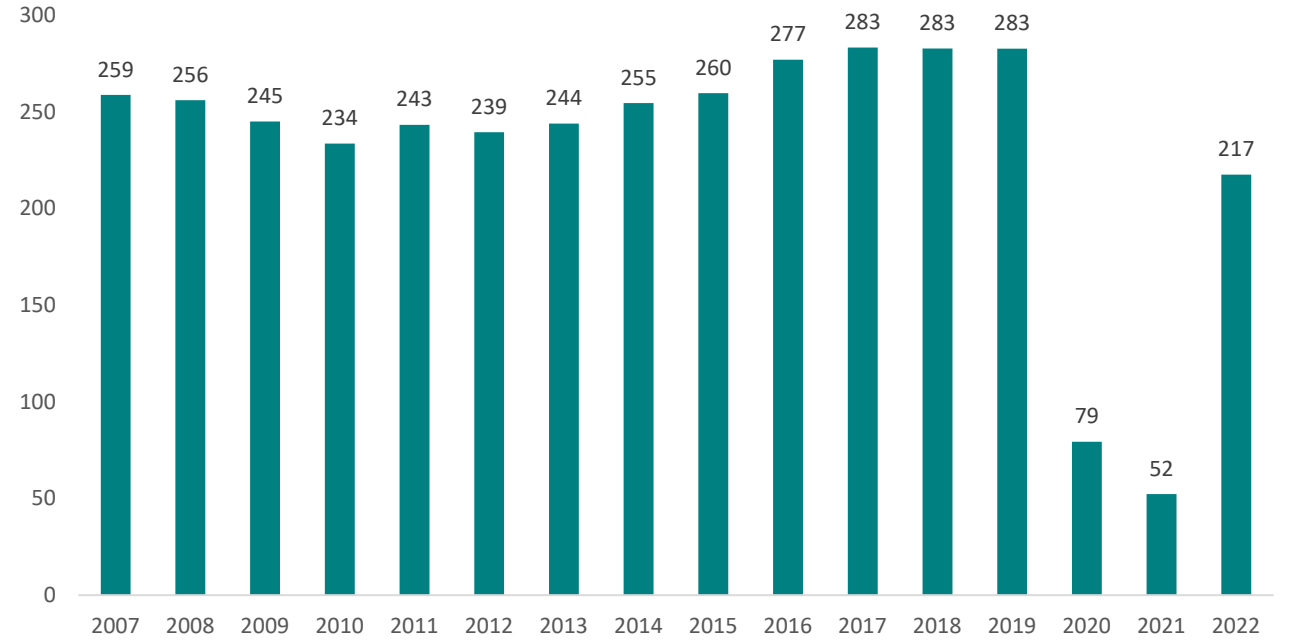
4.1.7 Recent growth in passenger and aircraft movements is shown in Figures 4.2.3 and 4.2.4 below.

Figure 4.1-3 - Gatwick Airport Passengers (m)



Source: CAA Statistics

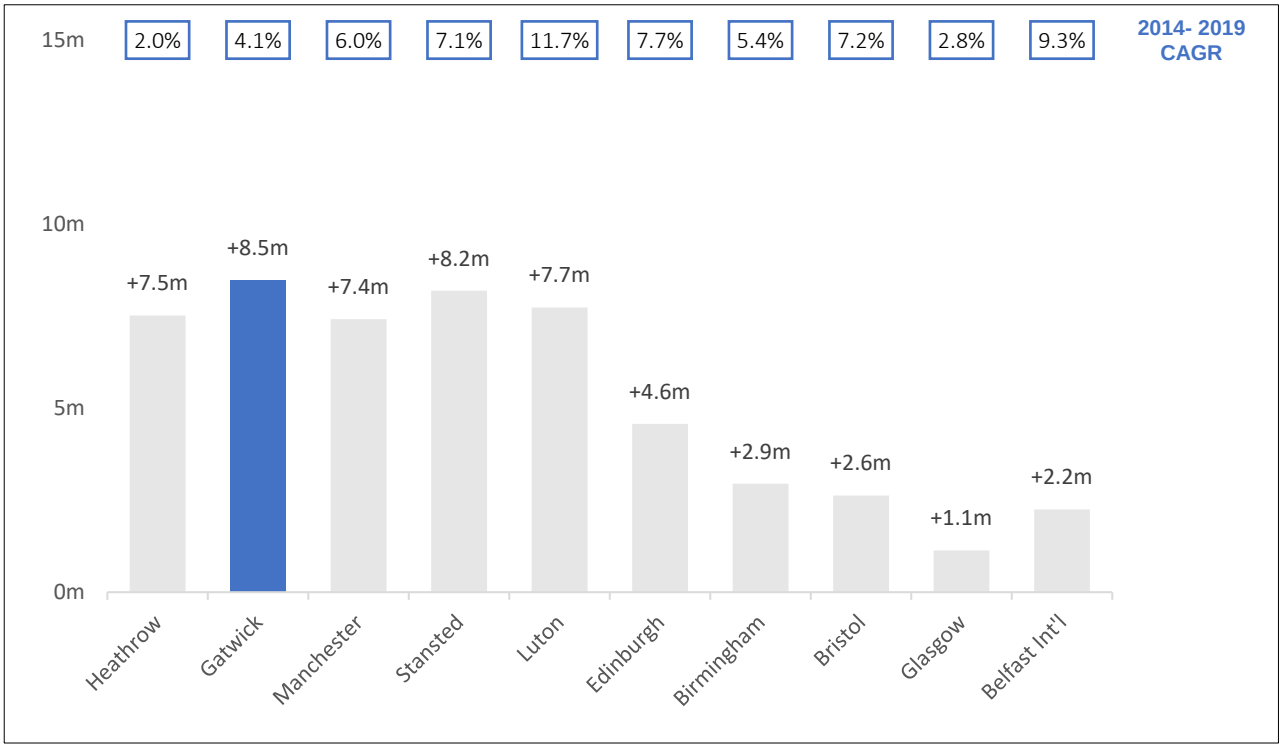
Figure 4.1-4 - Gatwick Airport Air Traffic Movements (ATMs) (000s)



Source: CAA Statistics

4.1.8 Over the five year period prior to the pandemic (2014-2019), the percentage increase in passenger growth at Gatwick averaged 4.1% per annum which is slightly less than UK average of 4.5% due to capacity constraints. But, despite the increasing capacity constraints, overall passenger numbers increased more at Gatwick than at any other UK airport.

Figure 4.1-5 - Passenger Growth Comparisons, UK Market (5 years: 2014-19)



Source: CAA Statistics (Top 10 UK airports chosen based on passenger ranking in 2019)

4.1.9 Notwithstanding the incremental growth that has been achieved at Gatwick through larger and fuller aircraft, seasonal spreading outside the peak periods, and the release of a small number of slots at peak teams, as is explained in Chapter 5 the demand for travel substantially exceeds the levels of growth that Gatwick can achieve through these means.

Destination Growth

4.1.10 In the last 10 years, domestic volumes have remained relatively flat whilst over 10 million and 4 million passengers have been added in the short-haul and long-haul overseas market categories respectively. The growth in short haul markets has been driven by ongoing growth from low-cost carriers (LCCs) which continue to account for a significant share of growth in the European aviation market. The long-haul growth has been driven by many new intercontinental markets being added by a range of carriers (full service and LCCs) as Gatwick continues to expand its long haul-connectivity.

4.1.11 Whilst demand in the short-haul market is well distributed between London's airports, only Gatwick provides any substantial alternative to Heathrow for the long-haul market segment. Heathrow accounts for over 80% of demand whilst Gatwick achieves a 17% share with the remaining airports accounting for the final 3%.

4.1.12 However, given that a significant share of Heathrow's long-haul traffic is for passengers connecting between flights (i.e. not London demand), Gatwick is estimated to achieve a share approaching 25% for the total 'local' London 'origin and destination' long haul demand (i.e. passengers with their 'true' origin or destination as London).

4.1.13 Other airports such as Luton do not have the runway capabilities to serve many long-haul markets. Although several global hub carriers such as Emirates, Qatar Airways and Cathay Pacific serve the wider London catchment by operating from a combination of airports, when airlines choose to expand their presence within the London market, Gatwick is the clear favourite (after Heathrow).

4.1.14 For example, Emirates has served Gatwick for over 25 years. With their Heathrow operations as their main base, they have also maintained a strong Gatwick presence with around 1m passengers per year carried in 2019. Qatar Airways expanded their London operations and returned to Gatwick in 2018 now accounting for over 0.5m passengers per year.

4.1.15 EasyJet is a key carrier in the London market, now accounting for over 30m passengers per year. Following their initial launch at Luton and widening their London presence to include other London airports, by 2005 their capacity was evenly spread across Gatwick, Luton and Stansted with approximately 5m passengers at each airport.

4.1.16 Between 2005 and 2015, easyJet prioritised their growth at Gatwick over the other London airports. By 2015, easyJet had added 12.3m passengers at Gatwick to reach 17m, whilst at Luton and Stansted their demand had reduced by 160,000 and 2.3m respectively.

4.1.17 In 2019, Gatwick accounted for 63% of easyJet's London operation, up from 32% in 2005. This had increased to over 70% in 2022 reflecting recent slot acquisitions from other carriers including the purchase of Thomas Cook slots following their insolvency proceedings in 2019.

4.1.18 Chapter 5 documents the extent to which applications from airlines to serve additional destinations from Gatwick cannot be satisfied without more capacity at the airport.

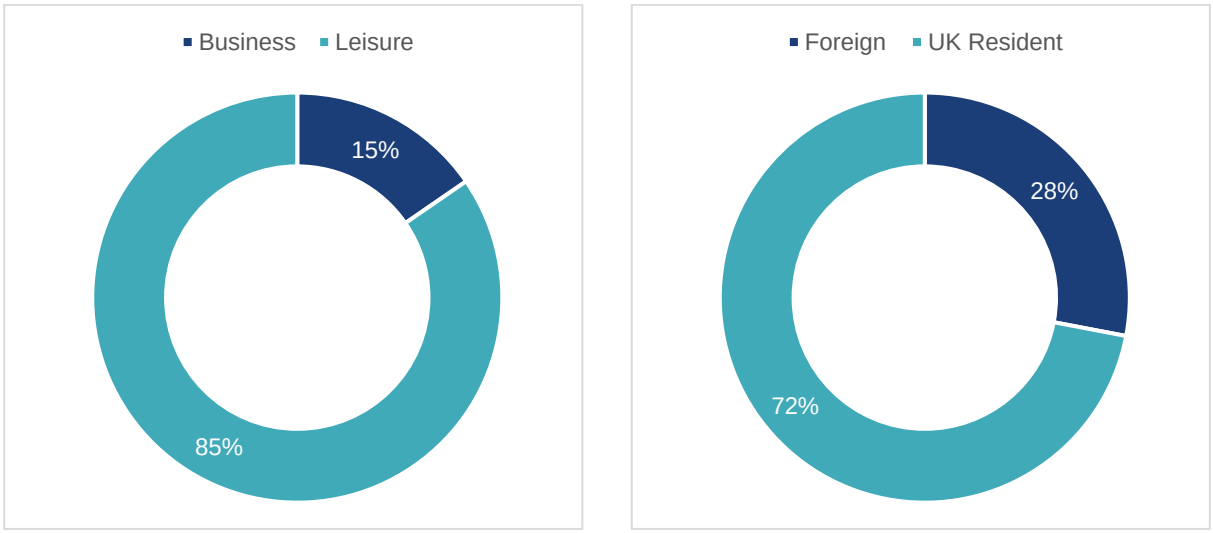
Passenger Type

4.1.19 The UK CAA passenger survey data[17] provides a guide for the passenger types using Gatwick Airport. In 2019 15% of terminating[18] passengers were using the airport for business purposes and the remainder for leisure purposes. This split has been relatively stable as over the 2010-19 period the business share averaged 14%. During this period there has been relatively limited deviation despite Gatwick adding a further 14m passengers.

4.1.20 UK residents account for the majority of Gatwick's passengers with a share of 72% of terminating passengers in 2019. Again, this share has been relatively consistent over the decade leading up to 2019 when it averaged 74%.

[17] A survey conducted interviewing approx. 30k Gatwick passengers in 2019 (<0.1% of demand)
[18] Excludes transfers

Figure 4.1-6 - Gatwick Passenger Types, 2019

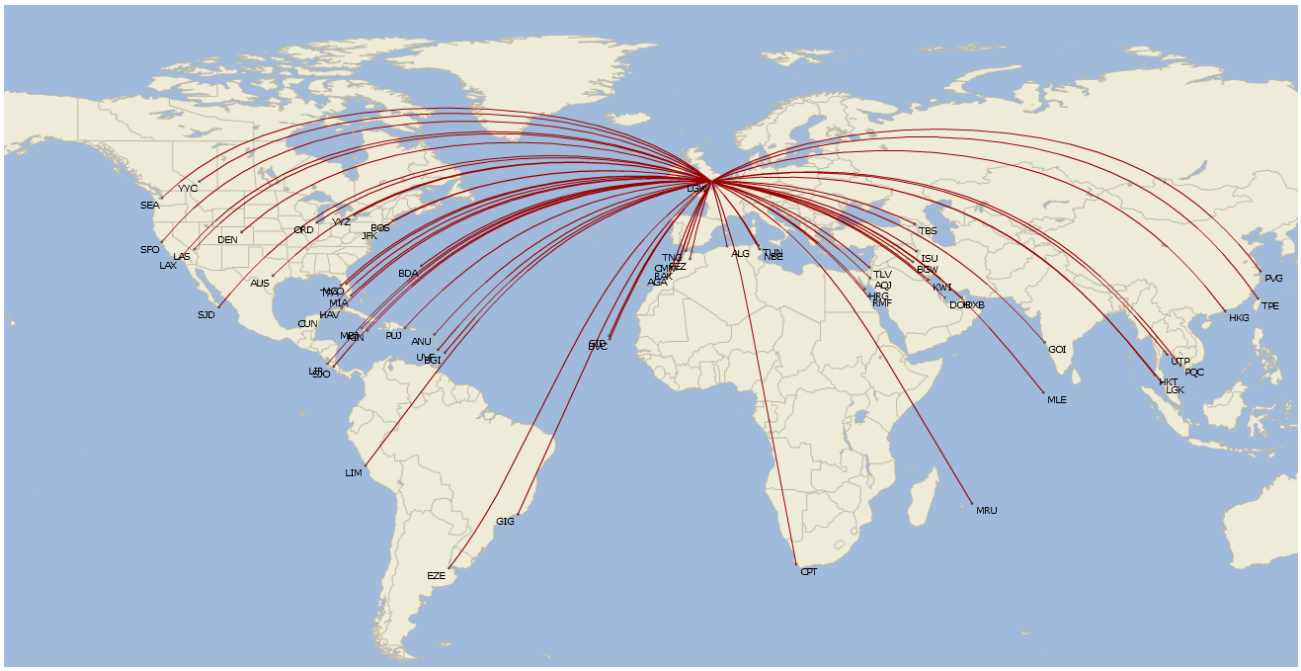


Source: CAA Survey 2019

Airlines and Destinations

4.1.21 Gatwick's network is the most extensive of all the London airports. In 2019 Gatwick served 219 destinations compared to 211 at Heathrow,185 at Stansted and 139 at Luton. Gatwick is the second ranked airport in the London system for long haul (non-Europe) connectivity with 62 destinations compared to 2 at Luton and 7 at Stansted.

Figure 4.1-7 - Gatwick Routes (outside Europe)



Source: OAG Schedules, March 2020

4.1.22 Over the last two decades global air travel has been revolutionised by the trend towards 'low-cost' airlines. Supported by the deregulation of aviation markets within Europe and elsewhere, this trend has continued, and low-cost airlines have opened up new routes and destinations to

business and leisure travellers, stimulating a long period of growth in air traffic. Initially this growth took place in short-haul markets where operating economies could easily be gained by flying aircraft more intensively on multiple routes every day. This drove up aircraft utilisation, allowing air fares to be reduced whilst still achieving profitable operations. More recently, the introduction of more fuel-efficient long-haul aircrafts are allowing airlines to extend the low-cost model to a wide range of long-haul destinations.

4.1.23 Gatwick has been at the forefront of this low-cost revolution. In the past ten years passengers on the low-cost airlines serving Gatwick have grown from less than 30% of total throughput to 62% in 2019. The increasing number of airlines serving this market is undoubtedly a big factor driving growth at Gatwick, and it has also stimulated the wider London market with lower fares and greater choice.

4.1.24 Gatwick is also playing a key role in the emergence of low-cost long-haul services, supporting an expanding network of such routes and new entrant airlines. For example, Norse are replacing much of Norwegian's lost capacity as well as Scoot introducing flights to Asia.

4.1.25 In addition, demand remains strong for full-service airlines, and these also have growth plans. Recent applicants for slots at Gatwick include existing airlines seeking to grow both short-haul (Wizz Air, Ryanair, easyJet, Vueling) and long-haul (Air India, China Eastern, WestJet) plus new airlines seeking to enter the Gatwick short-haul market (SunExpress, SAS, Alitalia) and long-haul market (China Southern to China, Vistara to India and JetBlue to USA).

4.1.26 Gatwick has had limited slot availability to support the launch of new routes and airlines. Recently, whilst some additional demand has been accommodated for carriers such as Air India and JetBlue, Gatwick has equally had to turn away carriers due to the lack of available slots. As explained in Chapter 5 this has included a number of American/Chinese/European airlines, reflecting demand from regional airlines, LCCs and full-service carriers.

Night Flights

4.1.27 Whilst Gatwick is allowed to operate at night (defined as hours between 2300 and 0700 hours), there are restrictions on the level of night-time noise that is allowed and the number of planes that can fly at night during the night quota period (NQP, 2330 to 0600 local time). This is set out in the Government's 2017 Night Flight Restrictions for Heathrow, Gatwick and Stansted which cover the period to 2022 and has recently been extended to 2025 following consultation.[19]

4.1.28 Gatwick typically has around 45-50 flights per night during the NQP in the summer, and 18-20 during the NQP in the winter.

4.1.29 Night flights are important, and they play an important part in supporting airlines' operating models. They enable timely and convenient departures from distant countries and allow routes to be flown which would not otherwise be viable. An example is the way in which night time flights allow aircraft to make several rotations every day – a vital way of ensuring the economic viability of the airlines' operations, particularly for low-cost operators.

[19] The Government are currently consulting on night flight restrictions at Heathrow, Gatwick and Stansted airports beyond 2024 plus its future national night flight policy at designated airports - https://www.gov.uk/government/consultations/night-flights-restrictions-at-heathrow-gatwick-and-stansted-airports-beyond-2024-plus-national-night-flight-policy

Passenger Catchment

4.1.30 Gatwick's proximity to London and surface access links to the wider South East (and beyond) provide a wide catchment area. Recent analysis by Gatwick estimates a population of 17m people within 90 minutes of the airport.

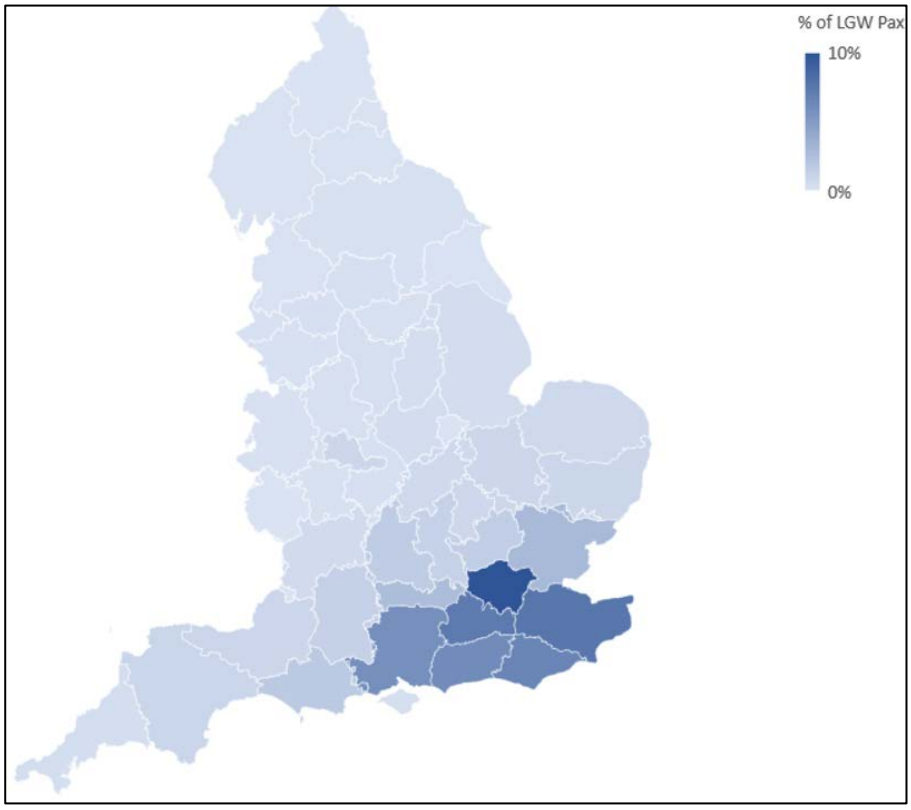
4.1.31 According to CAA Survey data, 81% of Gatwick's terminating passengers (i.e. excluding transfer passengers) were travelling to/from destinations in London or the South East. Greater London is the largest source market (42%), but the nearby counties of Kent, Surrey and Sussex account for a further 27%. Of the 19% of passengers travelling to/from destinations outside of the South East, the majority were travelling to the East or South West of England.

4.1.32 Gatwick's core catchment area includes the surrounding counties and South London boroughs where Gatwick attracts the highest share of inbound and outbound passengers. In 2019 Gatwick achieved a 53% share in these areas compared to 29% for Heathrow, 10% for Stansted and 5% for Luton. Higher market shares (>60%) were achieved for the short haul market segment where Gatwick is the number one London airport for local short haul traffic (i.e. excluding transfers).

4.1.33 Gatwick's catchment area is not just London and the South East. Recent improvements to the Thameslink rail programme mean that more towns and cities are now a relatively short trip by rail:

- Cambridge - 90 minutes compared with 123 minutes from Heathrow;
- York - 150 minutes compared with 189 minutes from Heathrow; and
- Leeds - less than 180 minutes compared with 201 minutes from Heathrow.

Figure 4.1-8 - Gatwick's Catchment (% Gatwick passengers from Counties)



Source: CAA Survey

4.1.34 Geographically, Gatwick's location means that, whilst it serves a more distinct catchment (compared with other airports[20]), at the same time it benefits from fast and frequent transport links to central London destinations and easy accessibility from a wider area.

Air Cargo

4.1.35 Whilst Gatwick is not presently served by any cargo only airlines, the supply side dynamics of the routes and carriers play a pivotal role in cargo performance, with long-haul widebody movements to markets such as Asia and the Middle East providing significant opportunity for cargo to be carried in belly holds of passenger services.

4.1.36 Gatwick's cargo performance has been increasing in recent years, reflecting the growth in the number of long-haul markets and carriers and the greater hold capacity of long-haul aircraft. In 2019 150,000 tonnes of cargo was carried in the belly holds of passenger aircraft.

[20] In the short haul market Gatwick achieves >60% of its outbound demand from catchments where it ranks #1 (e.g. South Coast, South London). For Luton and Stansted this is lower at approx. 50% and <40% for Heathrow (CAA Survey, 2019)

5 Need for Growth at Gatwick in response to Passenger Demand

5.1. UK Air Passenger Demand

5.1.1 It was in 2012 that the Government established the Airports Commission in recognition that there was a looming shortage of airport capacity in London and the South-East – a shortage so severe that it posed risks to the UK economy and to the UK's hub status. Eleven years later (and for various reasons) little progress has been made but the projected scale of growth in demand for aviation has materialised and is forecast to continue to grow. Government policy reviewed in Chapter 3 is clear that not increasing airport capacity is not an option and that the challenges posed by the need for aviation growth must be met.

5.1.2 In 2019 prior to the COVID pandemic UK airports handled a record 300 million passengers – a more than doubling of numbers since 1997, and growth of 87 million passenger (+41%) since 2010 following the global financial crisis in 2008.

5.1.3 Whilst recognising some current market uncertainty, the pandemic is not expected to alter consumer behaviours in a way that will have a significant permanent impact on the long-term demand for air travel and recovery form the pandemic has been rapid. Therefore, it is clear from the rate of recovery, evidence of over subscription for slots at Gatwick and from forecasts of growth, that overall demand for air travel will recover to and exceed previous levels, driven by factors such as global and UK economic growth and by the continuing need for international connectivity.

5.1.4 Demand forecasts prepared by the Department for Transport provide long term forecasts of UK air passenger demand. Its 2017 forecasts predicted continued growth in demand of around 1.8% per annum in the long term (2016-2050) to 356 million by 2030, 421 million by 2040 and 494 million in 2050 in its central case projection[21]. These forecasts were updated by the more recent UK Jet Zero forecasts from 2022, published as part of the Government's Jet Zero Strategy[22][23].

5.1.5 The Jet Zero forecasts use the same model/approach as the 2017 forecasts but were updated with more recent market data as well as updated segmentation. They also take account of a range of factors, including the likely increase in the cost of carbon.

5.1.6 The Jet Zero forecasts present a very similar trajectory to the 2017 forecasts. They predict that UK passenger demand will grow at around 1.7% p.a. in the long term (2018-2050). The Jet Zero scenario 1 forecasts ('Continuation of current trends') predict demand of 354 million passengers per annum (mppa) by 2030, 425 million by 2040 and 493 million in 2050, whilst its Scenarios 2, 3 and 4 forecasts (embodying different levels of high ambition for reducing emissions) predict comparable demand in the shorter term and slightly lower demand over the medium / long term, with some 355 million passengers by 2030, 422 million by 2040 and 482 million by 2050[23], amounting to a 200 million passengers increase in demand across the UK's airports -

[21] DfT Forecast Tables 25 & 28 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/671706/UK-aviation-forecasts-2017-data.xlsx)
[22] Jet Zero Dataset https://www.gov.uk/government/publications/jet-zero-modelling-framework
[23] Jet Zero Dataset https://www.gov.uk/government/publications/jet-zero-modelling-framework

approximately a 70% increase by 2050 compared to their 2018 baseline. The chart below shows the DfT 2017 forecasts alongside Jet Zero Scenario 1 - 4 forecasts.

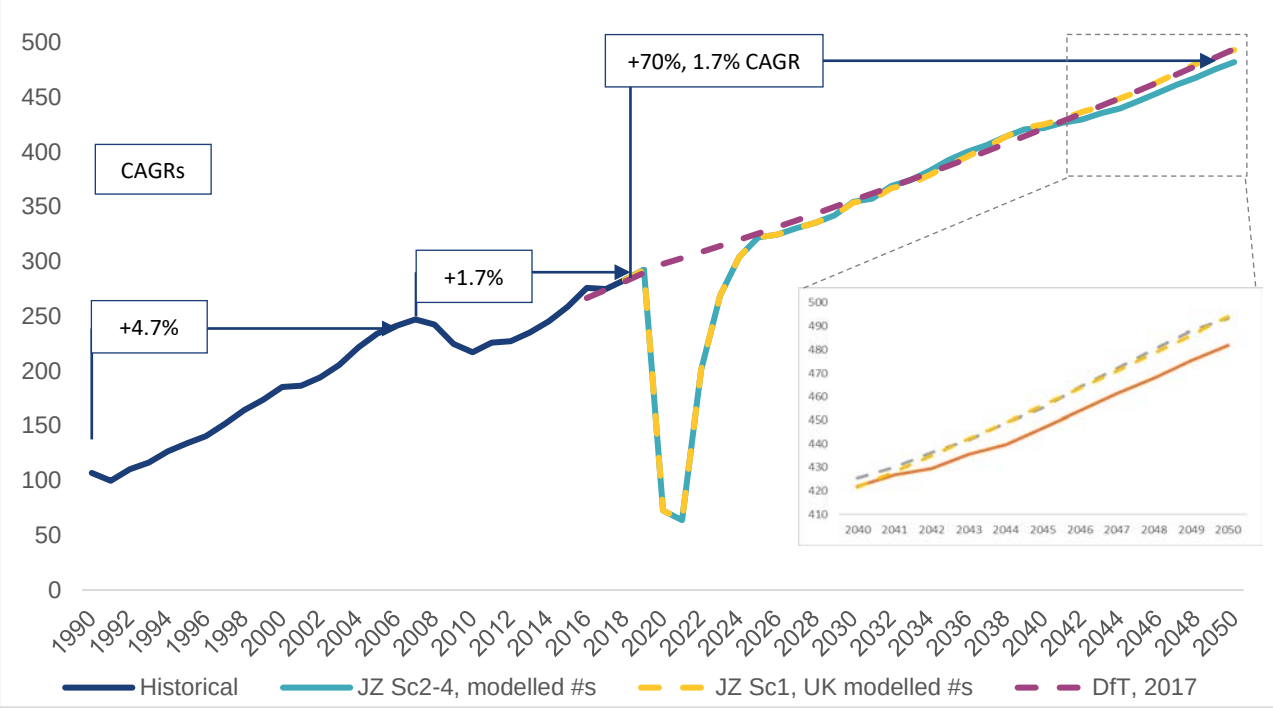
Table 5.1-1 - Comparison of DfT and Jet Zero Forecasts

Source	Period	UK, 2050	CAGR
DfT, 2017	2016-50	494	1.8%
JZ Sc2-4	2018-50	482	1.7%
JZ Sc1	2018-50	493	1.7%

Table 5.1-2 - UK Jet Zero Forecasts, Spot Years (Passengers, m)

	2018	2025	2030	2035	2040	2045	2050
JZ Sc1	283	322	354	388	425	455	493
JZ Sc2-4	283	322	355	393	422	447	482

Figure 5.1-1 - DfT 2017, and Jet Zero Forecasts, UK Terminal Passengers (m)



5.2. Passenger Demand in London

5.2.1 London and its hinterland are served by 6 main commercial airports comprising, in order of passenger throughput, Heathrow, Gatwick, Stansted, Luton, London City and Southend. These airports are critical to the UK's international connectivity.

5.2.2 London is the biggest aviation market in the world in terms of passenger numbers. In 2019 these airports served 181 million passengers, representing 60% of the total UK passengers. This is more than New York, Tokyo, and Shanghai, the next three largest markets, and a large part of

this stems from the size of London itself as well as the leading role it plays in global commerce, tourism and international connectivity.

5.2.3 Demand in the London system has been subject to strong growth, with over 54 million passengers added since 2010, and 34 million additional passengers in the five-year period 2014 to 2019.

5.2.4 It is widely recognised that airports in London and the South East of England are increasingly facing longer term capacity issues. It was for this reason that in 2012 the coalition government established the Airports Commission to examine the scale and timing of any requirement for additional capacity to maintain the UKs position as Europe's most important aviation hub and identify and evaluate how any need for additional capacity should be met in the short, medium and long term.

5.2.5 Following the recommendations of the Airports Commission in its final report in 2015, the Government designated the Airport National Policy Statement in 2018, supporting the development of a third runway at Heathrow.

5.2.6 Alongside the ANPS the Government also published policy supporting for the development of other airports to make best use of their existing infrastructure (MBU). This was in response to a recommendation of the Airports Commission that more intensive utilisation of other airports would also be imperative for the UK to continue to grow its domestic and international connectivity, particularly in view of the then anticipated 10-year timeframe it would take for the 3rd runway to open at Heathrow.

5.2.7 Heathrow Airport Holdings Limited (HAHL) – the owner and operator of Heathrow and the promotors of the 3rd runway at Heathrow - commenced work on the extensive and detailed studies that would be required to support a Development Consent Order application to seek formal consent for Heathrow R3. However, HAHL suspended its work in 2020 as a result of the pandemic. Since then, HAHL has not announced any timeframe for recommencing its process for seeking development consent and there is no indication that work will be recommencing in the short term. Even if HAHL does restart work it is now considered unlikely that Heathrow R3 could be operational much before the mid 2030s as a result of the delays to the consenting process, which would be expected to consequently delay their anticipated opening date.

5.2.8 The Heathrow Runway 3 project is not currently being publicly progressed and there is significant uncertainty surrounding when, or indeed if, a third runway will now be developed at Heathrow.

5.2.9 Uncertainty regarding the expansion or otherwise of Heathrow or other airports was the subject of debate at the Manston inquiry and the Secretary of State's conclusions on the issue included:

"97. *On the matter of capacity being made available at airports elsewhere, the Secretary of State accepts that there is potential for all existing airports to expand in future to increase capacity. However, the Secretary of State is of the view that in considering whether there is a demand for the capacity the Development aims to provide, he is not able to attach weight to applications that have yet to come forward. This is because there is no certainty that capacity from such applications will be delivered. For example, aspiration plans setting out future growth may be modified or changed, or they may not come forward at all. Where planning permission is required, both the ANPS and the MBU policies are clear that they do not prejudge the decision of the relevant planning authority responsible for decision-making on any planning applications. Such*

applications are subject to the relevant planning process and may not ultimately be granted consent by the decision-maker. In addition, the aviation sector in the UK is largely privatised and operates in a competitive international market, and the decision to invest in airport expansion is therefore a commercial decision to be taken by the airport operator. This means that while increase in demand (for air freight services) could potentially be met by expansion at other airports, those airport operators may not decide to invest in changes to their infrastructure to meet that demand. It is therefore not possible to say with any certainty whether indicative capacity set out in growth plans will result in actual future capacity."

"102. *The Secretary of State notes that the Examining Authority [ER 5.6.45] and the Independent Assessor (IAA section 5.3) consider that there is spare capacity at other airports [ER 5.6.45]. It appears that in concluding this, the Examining Authority and the Independent Assessor are relying in part on aspirational growth plans and the potential for growth at other airports. Such capacity is not required to be taken into account by policy, and it is not in the Secretary of State's view otherwise obviously material to the Secretary of State's decision on this Application for the reasons set out above, principally the lack of any certainty that such potential capacity will ever come forward. To the extent that possible capacity is legally material, the Secretary of State gives no significant weight to it for the same reasons."*

5.2.10 For the purposes of preparing the assessment, GAL has assessed the effects of the Project without the development of the 3rd runway at Heathrow. However, GAL considers the potential effects of its development on the forecasts for Gatwick in this document, notwithstanding the terms of the Manston decision.

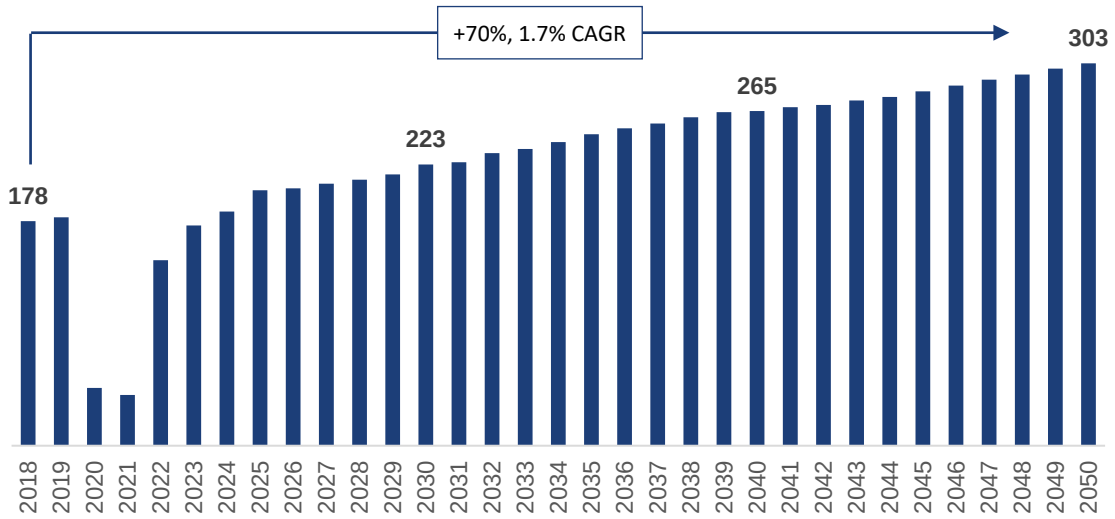
5.2.11 GAL has reviewed the UK's Jet Zero passenger demand forecasts to examine the need for further capacity in the London airports. The forecasts do not support any view that (even if it should be assumed) a third runway at Heathrow would meet the need by itself for additional capacity in the South-East or that that there is any choice to be made between expansion at either airport. The forecasts of capacity, set out in the Jet Zero Modelling Framework assume both the full capacity of an expanded Heathrow and of the NRP at Gatwick.[24]

5.2.12 As explained above (assuming similar growth expectations for London and the wider UK market), the Jet Zero Scenarios 2 - 4 forecasts predict passenger demand for London will increase to some 223 million passengers in 2030, 265 million in 2040 and 303 million in 2050. Overall, this represents a 70% increase by 2050 on the levels served in [2018[25]] and an increase of over 120 million passengers compared to 2019 levels.

5.2.13 This means that, by 2030, there is forecast to be an additional 42 million passengers in the London market – compared with the number of passengers served in 2019 - and that by 2040 and 2050 this increase will rise to 84 and 122 mppa respectively. Substantial new capacity is required to serve that demand. A third runway at Heathrow could not be consented and constructed in time to meet the shortfall of capacity in 2030, although, depending on when the runway came online, it could contribute significantly to the projected continuing shortfall beyond the mid 2030s and into the 2040s.

[24] Jet Zero: Modelling Framework, Annex D. March 2022.
[25] Jet Zero Forecasts reference a 2018 baseline which was used to ensure consistency

Figure 5.2-1 - Jet Zero Forecasts, London Passengers estimate (m)



5.2.14 The number of passengers and aircraft operations served at the London airports in 2019 is set out in the Table below.

Table 5.2-1 - Passengers at London Airports 2019

	Passengers	Passenger ATMs	Total Movements
Heathrow	81m	477k	478k
Gatwick	47m	283k	285k
Stansted	28m	173k	200k
Luton	18m	111k	142k
London City	5m	81k	84k
Southend	2m	19k	36k
Total	**181m**	**1,144k**	**1,225k**

Source: CAA (actual passenger numbers rounded to nearest million, LGW 46.6m rounded to 47m)

5.2.15 By 2030, without expansion, the London airports would have an annual terminal capacity of approx. 210[26] million passengers, which is 30 million above the annual throughput in 2019. Heathrow and Gatwick already experience serious capacity constraints[27], whilst Luton is now operating at its planning limit[28]. The forecast increase in passengers in the London market will result in demand being well above current planned airport capacity. There is a significant need for additional airport capacity in London and the South East to meet consumer demand for flying in the short and medium term.

Consultation on Sustainable Aviation Fuels, 2023

5.2.16 The DfT is currently conducting a consultation regarding the UK's sustainable aviation fuel (SAF) mandate. On the 12th of April 2023 they released various data sets focusing on potential

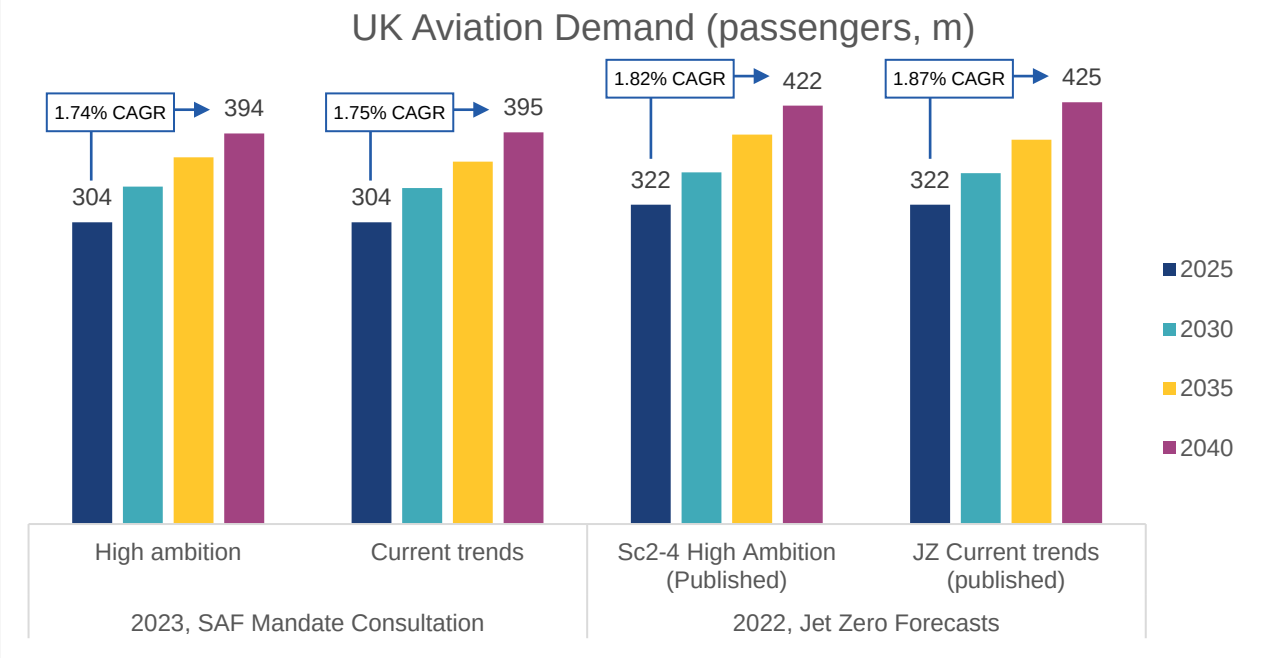
[26] Assuming 86m (Heathrow), 58m (Gatwick), 43m (Stansted), 18m (Luton), 8m (London City/Southend combined)
[27] Previous DfT forecasts have assumed a terminal capacity assumption of 45m passengers for LGW which was passed in 2019. Heathrow operates close to its planning cap of 480k annual ATMs whilst LGW operates at capacity during peak seasons
[28] LTN reached its 18mppa planning limit in 2019

scenarios which also included a reference to updated UK aviation demand forecasts. These forecasts were prepared using a range of updated macro inputs, including the OBR outlook from November 2022.

5.2.17 Both sets of forecasts focus on the long-term trends with traffic growing from an updated 'base' year of 2025, likely intended to reflect a year of stability following the Covid impacts seen in the 2020-2023 period.

5.2.18 In the period 2025-2040, the latest forecasts assume growth of 1.74% whilst the previous Jet Zero forecasts published in 2022 assume growth of 1.82%. By 2040 the demand for aviation is forecast to have increased 29% in the latest outputs compared to 31% in the 2022 JZ forecasts. In the context of an already capacity constrained market, these changes are not material.

5.2.19 Whilst the 2022 JZ forecasts are provided to 2050 the latest consultation only provides passenger and ATM projections out to 2040. The following chart compares the two sets of forecasts.



5.2.20 Whilst the latest long term growth trajectory is consistent with previous DfT/Jet Zero modelling published in 2022, there has been a more notable update to the short-term outlook. In 2025 the latest forecasts assume UK aviation demand of 304 million passengers which is 7% above the modelled JZ baseline of 283 million passengers in 2018. The 2022 JZ forecasts assumed 322 million passengers in 2025 reflecting a more rapid recovery from Covid and short term growth.

5.2.21 Whilst the forecast short-term outlook has reduced in the DfT's latest forecasts, significant levels of growth are still forecast across the UK aviation industry. By 2040 the UK's demand for aviation is forecast to increase from 283 million in 2018 to 394 million passengers in 2040. This represents an increase of 111 million passengers against the baseline, or growth of 40%. Continuing the maturing growth trends will see demand of circa 450 million passengers by 2050, approximately 60% above 2018's baseline.

5.2.22 Using the updated growth forecasts and applying to the London airports:

- An increase of 20% by 2030 would add 36 million passengers
- An increase of approximately 40% by 2040 would add nearly 70 million passengers
- An increase of nearly 60% by 2050 would add over 100 million passengers.

Table 5.2-2 – Jet Zero Forecasts, 2023 (UK & London estimates)

		2018	2025	2030	2040	2050est
UK JZ	Pax, m	283	304	340	394	445
LON Est.	Pax, m	177	190	213	246	278
UK JZ	% vs 2018		+7%	+20%	+39%	+57%
LON Est.	% vs 2018		+7%	+20%	+39%	+57%
UK JZ	#,m vs 2018		21	57	111	162
LON Est.	#, m vs 2018		13	36	69	101

Note: UK JZ means the Government's Jet Zero Strategy forecasts.

LON Est. means GAL's estimate of London's share of that forecast growth.

5.2.23 Given the limited capacity available in the London airport system today, demand forecasts continue to demonstrate the need for further capacity across the London airports, be that through expansion or maximising the use of existing infrastructure.

Capacity and forecast growth at London Airports

5.2.24 It is important to understand the capacity constraints at other London airports.

5.2.25 **Heathrow** - As described above there is national policy support for development of a third runway at Heathrow, but uncertainty about when or even if it will be brought forward. Heathrow is subject to an air transport movement limit of 480,000 ATMs. It is considered that, in the absence of a third runway, its long-term capacity would be constrained to around an additional 9mppa (a total of 90mppa) in the 2040s[29]. In the event the 3rd Runway is brought forward it is estimated that it would be able to grow passenger throughput to 136mppa in 2050[30].

5.2.26 **Gatwick** - Gatwick does not have any planning limits on passengers or ATMs. Gatwick does have some capacity for further growth in annual passengers, with baseline forecasts prepared in support of the Project (which are presented in Chapter 5) predicting growth to about 67mppa over the period to 2047. It is important to recognise, however, that Gatwick's growth at peak times is constrained due to the airport's runway being very highly utilised at busy times, particularly the morning peak period, which is critical to the operations of main scheduled airlines, and the summer period and other holiday seasons). At these times Gatwick's runway is already fully utilised handling its declared capacity of 55 movements per hour at peak times, a level of throughput which is greater than any other runway in the world. Because of these constraints a proportion of the predicted growth is expected to occur through peak spreading as well as more limited growth at peak times.

[29] Further increases in average passengers per movement assumed by GAL.
[30] UK DfT Forecasts, Table 34 (the Jet Zero forecasts are ATM forecasts, not passenger forecasts)

5.2.27 **Stansted** - In 2021 Stansted gained consent for an increase on its previous passenger cap of 35 million passenger to 43mppa. It is also subject to an annual air transport movement limit of 274,000 movements.

5.2.28 **Luton** - Luton currently has a passenger cap of 18mppa but is seeking consent for an increase to 19mppa and has also recently submitted its application for development consent to further increase its passenger cap to 32mppa. If consent is granted for its 32mppa proposal it is understood that its throughput could increase to 21.5mppa before 2030, but it would not be until late 2030s[31] when a second terminal is constructed that its throughput would increase to 32mppa.

5.2.29 **London City** – London City has greater restrictions on the way it can operate than other London airports including a prohibition on flying on Saturday from 1300 through to Monday morning and no night flights are permitted. It also has a passenger cap of 6.5 mppa and an air transport movement limit of 111,000. In December 2022 it submitted an application to increase the passenger limit to 9mppa and to allow flying on Saturdays until 1830.

5.2.30 **Southend** – Southend has an air transport movement limit of 53,000 movements which is considered equivalent to about 5 million passengers.

5.2.31 In 2019 Heathrow and Luton were operating at their planning limits whilst Gatwick's demand was significantly more than its capacity during the summer season. Other airports only provide limited growth options whilst demand for aviation across the London market is set to continue growing.

5.2.32 Even with the Gatwick NRP that provides a further 13 mppa uplift, it is clear that the shortfall in capacity will still exceed 50 million passengers over the long term.

5.2.33 The Manston decision makes clear the Secretary of State's position that it should not be assumed or relied upon that other capacity will come forward but, even if it were to be assumed that all other airport capacity proposals in the South East were to be proposed, consented, developed and operated to capacity, expansion at Gatwick would still be appropriate. There are several reasons for this:

1. Heathrow Capacity Delivery

5.2.34 Even assuming Heathrow R3 is bought forward it appears unlikely that it could now be open before the mid-2030s.. This would be five or more years behind the delivery of capacity at Gatwick.

5.2.35 If Heathrow were to deliver a third runway in the mid-2030s, it is unlikely that the full potential capacity would be able to be realised until later that decade. Construction at Heathrow would be expected to focus on the delivery of the runway with supporting terminal infrastructure likely to be phased to release the runway's potential over several years. This is consistent with Heathrow's own proposals set out in consultation before work on the R3 project was paused.

2. Heathrow's growth is complementary to the growth of Gatwick

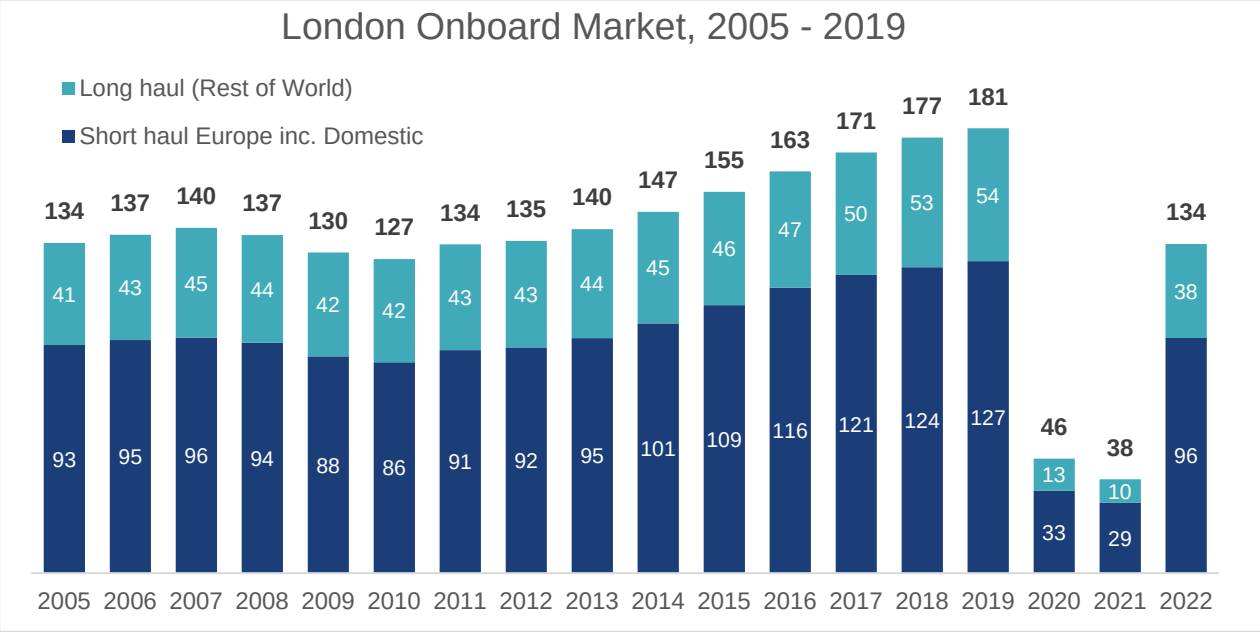
5.2.36 Whilst Heathrow currently caters to many airlines, it has not traditionally served the fast-growing LCC segment. In 2019 Heathrow accounted for just 1.2m LCC passengers, just 3% of London's total LCC demand of over 70 million passengers. These being the 'LCC' like services offered by

[31] Luton Draft Need Case, 2022

the lower cost operating airlines within the major full service European airline groups (e.g. Vueling for IAG and Eurowings for Lufthansa). In contrast Gatwick's traffic is dominated by LCCs with service from a range of carriers including easyJet, Ryanair, Wizz Air, Norwegian, Norse, Vueling as well as others.

5.2.37 In 2019 the short haul market (inc. domestic) accounted for 127m passengers, some 70% of all onboard passengers in the London market. This market has grown significantly – with some 34m short haul and domestic passengers added since 2005, accounting for 73% of total growth in the London market (+34m short haul +12m long haul).

Figure 5.2-2 – London Onboard Market comparing short haul and long haul growth (passengers, m)



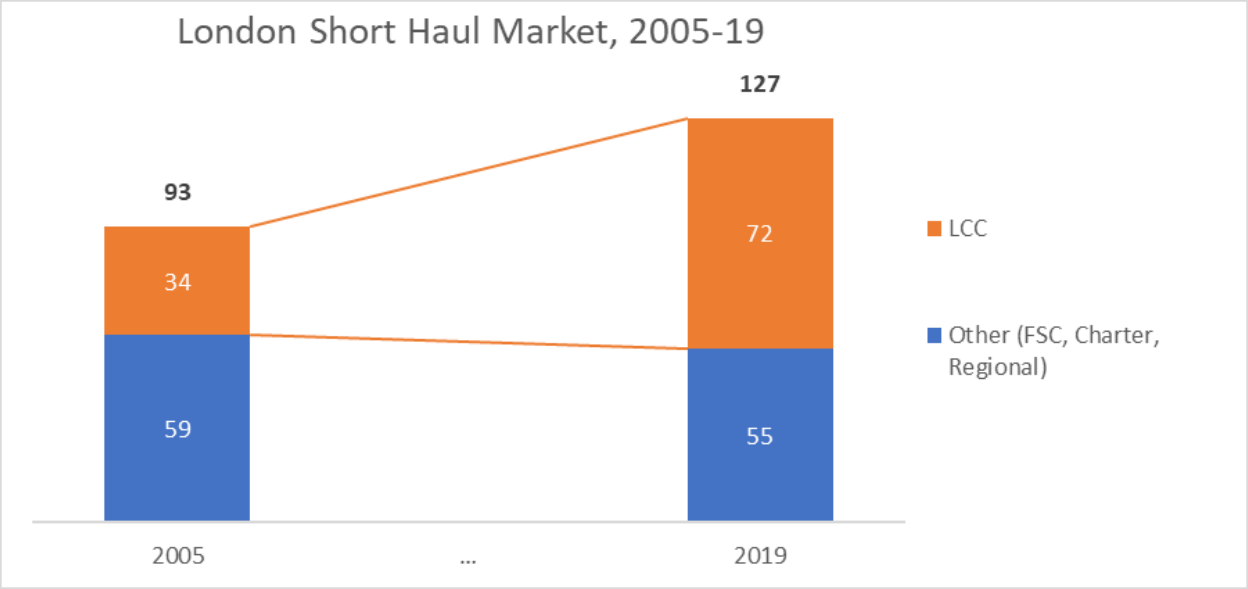
Source: CAA

5.2.38 This short haul market segment is forecast to deliver by far the largest growth in absolute passenger volumes[32] in the London market so it is important that this market segment can be served efficiently at London's airports.

5.2.39 In 2019, of these 127m passengers some 72m were carried by LCCs or 57% of this market segment. This market share has grown significantly as LCCs accounted for just 37% in 2005. In the 2005-2019 period LCCs have added 38m passengers whilst other airline business models have seen their volumes fall from 59m to 55m. Full-service carries remained relatively flat with charters driving the decline in the non-LCC segment.

[32] DfT/ICF Forecasts. For example, historically short haul has delivered +41m growth in 2010-19 period compared to +12m for long haul

Figure 5.2-3 – London Growth of Low Cost Carriers, Passengers (m) 2005 - 2019



5.2.40 Emerging from Covid, the LCC market segment has continued to gain share accounting for more than 60% of short haul demand in 2022. Reflecting fleet orders and growth plans, LCCs will continue to take share and drive the growth of the short haul market in London and across the wider European market.

5.2.41 The comparative share of the LCC market that is served by airports such as Gatwick, Luton and Stansted demonstrates that these airports have proved to be more attractive than Heathrow for this segment. There are several reasons for this, particularly the fact that the level of air passenger charges that are levied are much higher at Heathrow deterring LCCs.

5.2.42 Heathrow necessarily has higher landing charges than other airports. In 2019 Heathrow's aeronautical charges were nearly £23 per passenger whilst Gatwick's averaged under £11. Heathrow received permission to increase charges to over £31 per passenger during the recovery from Covid, although they are forecast to fall to £27.49 in the latest regulatory period (5 years). These levels will still be significantly above those at Gatwick.

Table 5.2-3 - Airport Passenger Charges – 2019

	Aero rev/pax	Source
Gatwick 2019	£11	LGW annual report
Heathrow 2019	£23	LHR annual report
Heathrow 2023-27 (CAA)	£27	CAA, Mar 2023

3. Gatwick's Northern Runway Project will provide benefits before other schemes

5.2.43 The NRP is anticipated to be operational in 2029, well ahead of Heathrow and some 8 years ahead of Luton's proposed DCO programme which assumes a capacity of 32mppa when their second terminal becomes operational in 2037. This phased sequence of delivery is helpful in light of the forecast continuing to increase demand throughout the 2030s and beyond.

Connectivity

5.2.44 Gatwick Airport is unique amongst London's airports as it accommodates significant numbers of full-service, low-cost, charter and regional airlines. This diverse range of carriers helps support a large route network, which has been successfully added to with new long-haul destinations in markets from Asia to the Americas, contributing to the 1 in 5 long haul passengers served at Gatwick across all London airports. Gatwick has the largest base for easyJet in Europe, who accounted for 19m passengers at Gatwick in 2019 and 41% of flights.

5.2.45 Since being sold by BAA, Gatwick has increased its share of passengers travelling to and from London airports, successfully competing to attract new airlines, and new routes to the UK's key trading partners as well as leisure destinations. In 2019, Gatwick had a 26% share of the London aviation market.

5.2.46 Gatwick's network remains the most extensive of all the London airports. In 2019 Gatwick served 219 destinations compared to 211 at Heathrow and 185 at Stansted and 139 at Luton. Gatwick is clearly the second ranked airport in the London system for long haul (non-Europe) connectivity with 62 destinations compared to just 2 at Luton and 7 at Stansted. Gatwick's proposed expansion is well placed to make an early contribution to London and the UK's connectivity.

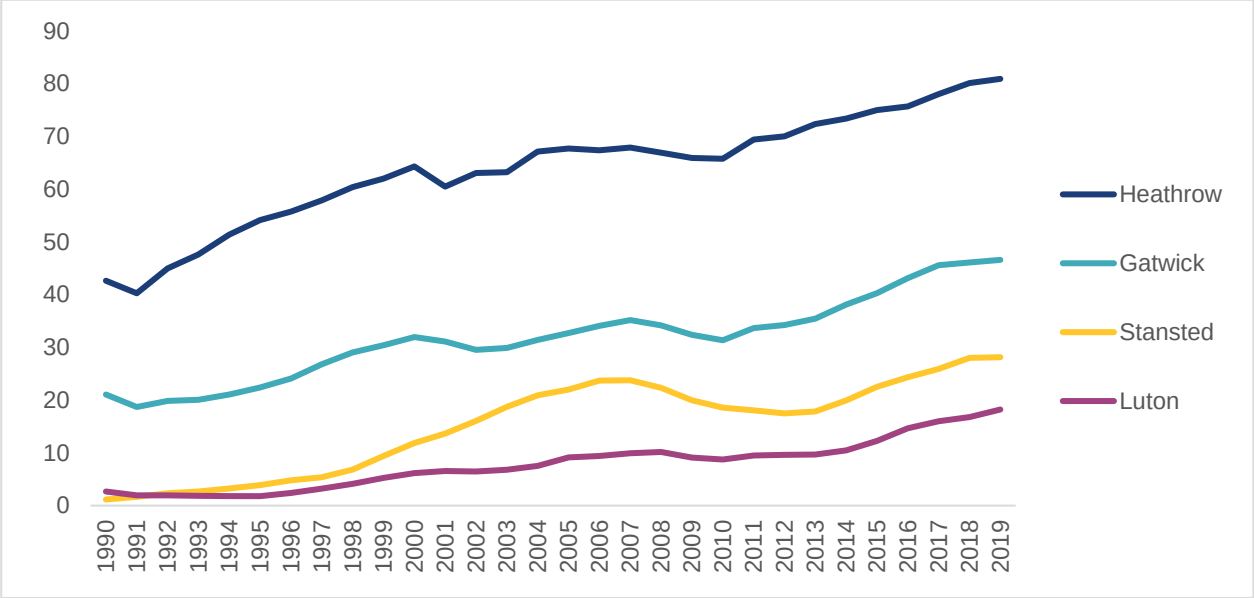
Table 5.2-4 - Number of Destinations served direct, 2019 (>60 flights per year, CAA)

	LGW	LHR	LTN	STN
Domestic	9	11	7	6
Europe	148	86	130	172
Rest of World	62	114	2	7
Total	**219**	**211**	**139**	**185**

Volumes

5.2.47 Gatwick has consistently ranked ahead of Luton and Stansted being second only to Heathrow in the capture of demand/capacity across the London market. In the decade leading up to 2019 Gatwick averaged serving 3.2 times more passengers than LTN and nearly 1.9 times more than Stansted.

Figure 5.2-4 – London Airport Passengers (excludes London City and Southend), millions



Source: CAA

Slot values

5.2.48 The 'secondary' slot market is one option airlines have to grow their slot portfolio at a congested airport when options from the existing slot pool have been exhausted. Under this process an airline can buy another airline's slots should a willing seller be found.

5.2.49 As Gatwick has become increasingly slot constrained, a secondary market for slots at Gatwick has emerged. The first significant 'trade' occurred in 2012, when Flybe sold 25 slot pairs to easyJet for an average of £0.8 million per pair. By 2019 slots at Gatwick were trading for close to £3m per slot pair reflecting the ever-increasing scarcity of capacity in the market. These values placed by airlines for Gatwick capacity are significantly higher than that of other London airports (except Heathrow) and all other UK airports (Manchester, Birmingham etc.) where a secondary market has yet to develop at scale.

5.2.50 The secondary market evidences the strength of demand and creates confidence that consented capacity at Gatwick would be taken up. For example, it is only via these means that carriers such as easyJet, Wizz Air and IAG have grown their presence at any scale[33].

Choice / Competition

5.2.51 Expanding Gatwick either alongside other airports (e.g. Heathrow R3) or in isolation will provide greater choice and competition to the London aviation market.

5.2.52 Gatwick is the only airport able to provide competition to Heathrow for long haul carrier markets. Luton does not have the runway length necessary for long haul, whilst Stansted only has a minimal long haul network on which to build.

[33]EasyJet acquired slots from Thomas Cook and Norwegian, Wizz Air from Norwegian/Others and IAG from Monarch

5.2.53 Gatwick is the only airport able to provide competition for a range of business models. Gatwick successfully serves the regional, LCC, Charter and full service segments. Heathrow serves the more mature full service carrier market whilst Luton and Stansted are both dominated by LCC traffic. A split of each airports carrier mix is provided in the following table for 2019.

Table 5.2-4 – London Airport Service Levels by Carrier Type, Passengers, m (2019)

	LGW	LHR	LTN	STN
Charter	4.4	0.0	0.3	0.7
Regional	0.4	0.6	0	0.2
Full Svc	13	79	0	0
LCC	29	1	18	27
Total	**47**	**81**	**18**	**28**

Source: CAA

5.3. Capacity and Demand at Peak Times

5.3.1 The above analysis has considered the capacity versus demand position at an annual level. But it is also important to recognise that demand varies across the year and is particularly important during certain times of the year and during particular hours of the day.

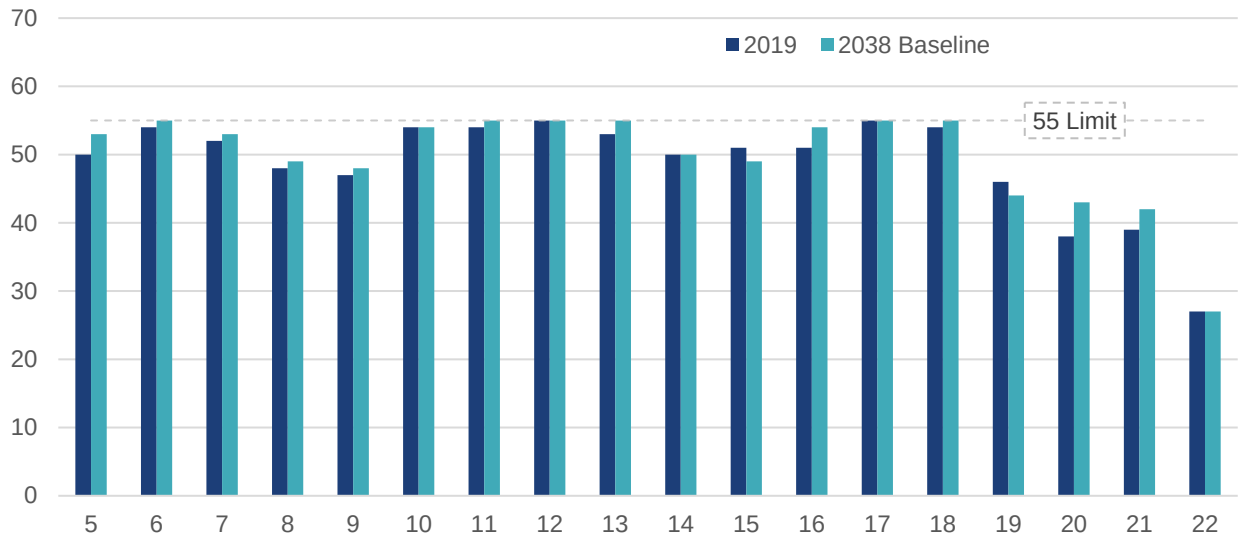
5.3.2 This Chapter considers how Gatwick currently operates and demonstrates that, whilst Gatwick has potential to increase its annual passenger throughput, it is very constrained at the busiest times of the day and busiest times of the year.

5.3.3 Up until 2015, when Gatwick served 40mppa, Gatwick was the world's busiest single runway airport as measured by passengers. It was overtaken by Mumbai International Airport which was operating with close to 50mppa and over 305k ATMs in 2018 compared to Gatwick's 46.6mppa and 280k ATMs.

5.3.4 Gatwick remains the busiest single runway operation during the day, scheduling 55 movements per hour compared to 47 for Mumbai. Mumbai is able to achieve higher annual throughput as it operates without night restrictions as well as a flatter seasonal profile throughout the year.

5.3.5 Gatwick's future baseline forecasts assume that the number of hours per day when 55 movements would be declared would increase over time to six hours.

Figure 5.3-1- Busy Day Schedule, ATMs by Hour (UTC)



5.3.6 For the total summer season (April-October), under the baseline forecasts, daily commercial ATMs are forecast to increase 7% from an average of 851 per day in 2019 to 915 in 2038 and to 927 in 2047.

5.3.7 Whilst the forecasts prepared in support of the Project suggest that some incremental growth is possible in response to intense demand, in practical, operational terms, by normal standards, Gatwick as a single runway airport is "full".

5.3.8 This means that Gatwick is unable to meet the full extent of incremental demand from airlines who wish to fly to and from Gatwick today.

5.3.9 Gatwick is classed as a 'Level 3 airport' in accordance with the Worldwide Airport Slot Guidelines due to the demand for airport infrastructure significantly exceeding the airport's capacity.[34] The Level 3 designation results in an independent coordinator - Airport Coordination Limited (ACL) - being appointed to allocate and manage the demand for slots within the declared airport capacity limits, from airlines and other aircraft operators intending to use the airport.

5.3.10 The slot coordination process takes place twice a year in preparation for the proceeding summer and winter seasons. As part of the process, the airport (in consultation with the airlines) declares the capacity available at the airport. The coordinator then allocates the available capacity in accordance with the Worldwide Airport Slot Guidelines on slot allocation and prioritisation rules[35]. Any existing incumbent airlines and other airlines not serving Gatwick can apply for slots.

5.3.11 Various factors can influence whether airlines decide to bid for slots, but as is clear from Table 5.3-2 below, the available slots at Gatwick in the summer season are heavily oversubscribed, with demand far exceeding the available capacity. Over the six summer seasons 2015 - 2020 (the last six seasons where the bidding process was not been in some way affected by COVID related impacts and temporary rule changes) the number of slots requested that were not able to be

[34] Worldwide Airport Slot Guidelines © 2022 Airports Council International, International Air Transport Association, Worldwide Airport Coordinators Group All rights reserved.
[35] Note: The UK adopted the EU slot regulations after Brexit in which the Airport Slot Guidelines are used as the initial basis for airport slot allocation

accommodated shows an overall upward trend[36] and a consistent demonstration of demand exceeding available capacity. Moreover it is likely that the picture presented is an understatement of the slot demand because there are known to be many airlines that would like to serve Gatwick but are put off from applying because they are aware the slots are oversubscribed and the prospects of obtaining slots at the times they would like are low, or because they are aware of the likely strong levels of competition they would face for slots at Gatwick.

5.3.12 Recent slot filings from ACL show how pre Covid applications for Summer 2020 (the last 'normal' pre Covid period) saw demand exceed supply by 15%, meaning that over 33,700 summer movement requests exceeded slot supply. Furthermore, over 26,600 of the allocated slots were not able to be offered at the times required by airlines , such that in total over 60,000 (nearly 26% of slots requested) were either not able to be fulfilled at all or not able to be offered at the times requested.

Table 5.3-1 - Data from Initial Coordination Reports by ACL for six summer seasons (2015 – 2020)

	Summer 2015	**Summer 2016**	**Summer 2017**	**Summer 2018**	**Summer 2019**	**Summer 2020**
Total Demand	197,639	217,941	211,099	232,306	218,920	233,601
Total slots allocated	182,755 (92.5%)	192,785 (88.5%)	195,234 (92.5%)	199,667 (85.9%)	194,135 (88.7%)	199,850 (85.6%)
Demand for slots not able to be met	14,884 (7.5%)	25,156 (11.5%)	15,865 (7.5%	32,639 (14.1%)	24,785 (11.3%)	33,751 (14.4%)
Number of slots allocated and cleared 'OK'	151,568 (77%)	160,252 (74%)	168,442 (86.3%)	172,775 (86.5%)	174,633 (90%)	173,235 (86.7%)
Allocated but not 'OK' (Selected reasons shown below)	31,187 ((17%)	32,533 (16.9%)	26,792 (13.7%)	26,892 (13.5%)	19,502 (10%)	26,615 (13.3%)
Runway constrained slot	*29,503*	*30,902*	*26,272*	22,793	19,084	25,467
ARR/DEP Turn feasibility	*470*	*629*	*233*	744	233	797
Terminal constrained	*300*	*143*	*106*	3,355	95	141

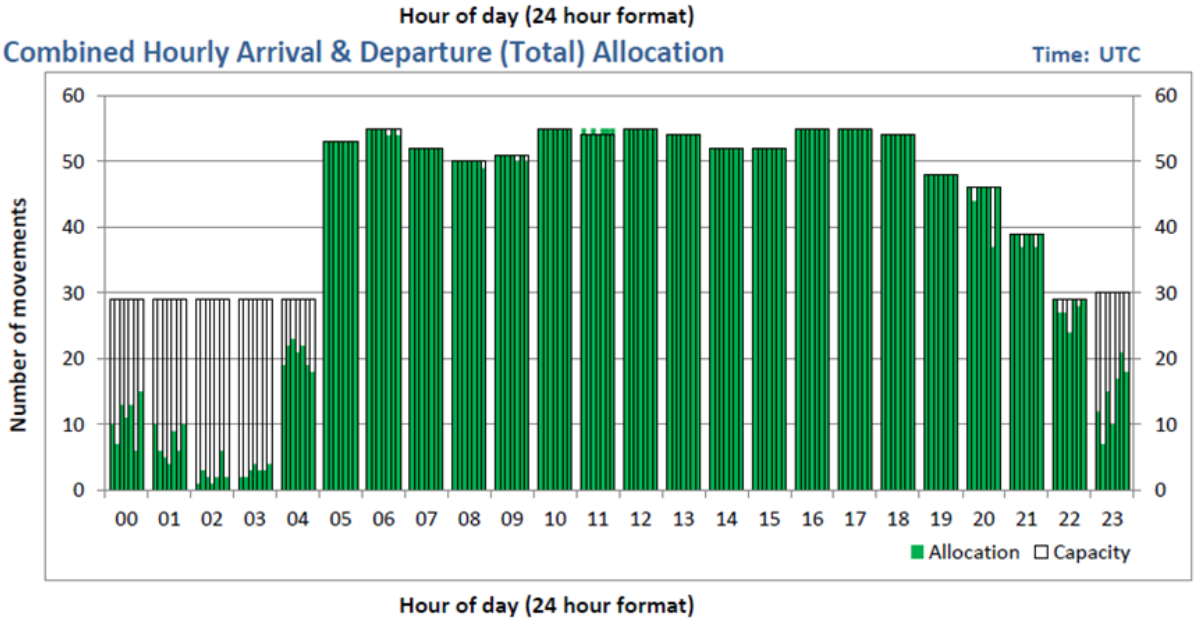
Note: OK is assigned by ACL when slot allocated withing 5 minutes of time requested

5.3.13 For the Summer 2020 seasons ACL also report that some 21 airlines were allocated less than 40% of their requested demand. This meant that they could not operate an intended service, for example they may have got an unworkable schedule or slots at commercially unviable times of the day. This included a selection of American, Chinese and European carriers reflecting demand from regional airlines, LCCs and full-service carriers.

5.3.14 Figure 5.3.2 below shows the allocation of demand by ACL in 2020 within the limits of Gatwick's declared runway capacity. The chart shows the available runway capacity by hour for each day of the week and the slot allocations made against that capacity. In all core hours of the day capacity is fully used. Prior to the allocation process demand for Gatwick's runway capacity exceeded supply in virtually all hours of the day, all seven days of the week.

[36] In the 2015 – 2020 period demand for slots that was not able to be met rose from 14,884 to 33,751

Figure 5.3-2 - Slot Allocation Summary (Summer, 2020) [37]



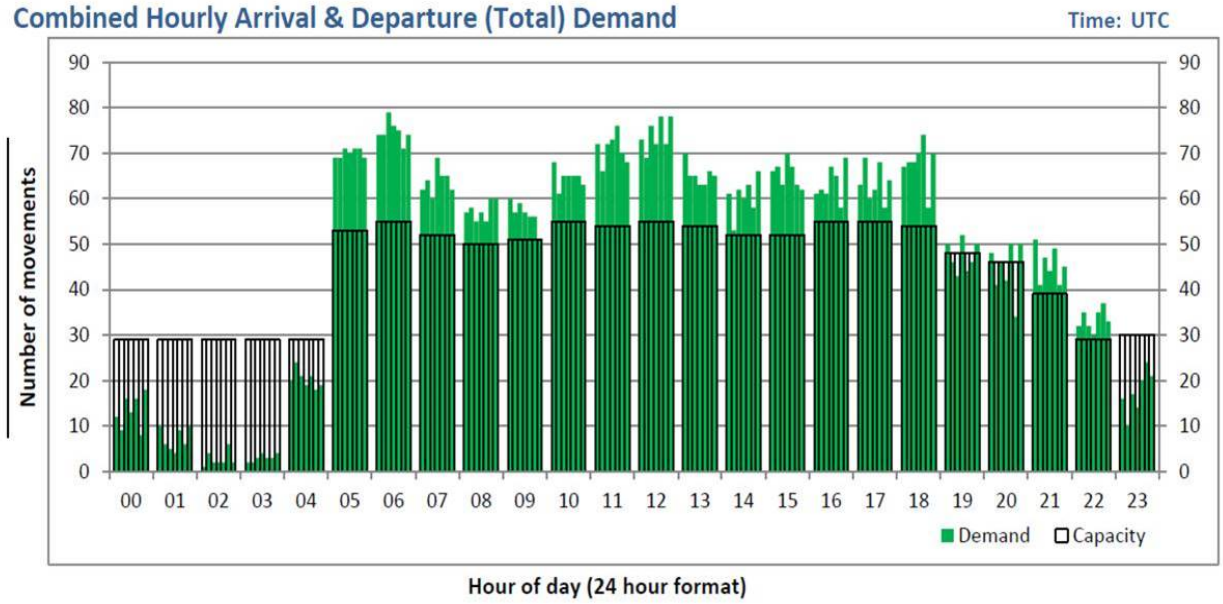
5.3.15 ACL report that demand for runway slots exceeds capacity at peak times:

"Capacity demand was strong across most hours and days of the week, with demand peaking at 80 movements on runway totals in the 0600 and 1200 hours, that is 25 movements over the declared limit of 55." (ACL: Interim Coordination Report, Summer 2020; executive summary)

5.3.16 This is illustrated in Figure 5.3.3 below which is extracted from the ACL report. As can be seen in the core hours of the day, for each day of the week, airline demand for slots significantly exceeded the declared runway limits.

[37] ACL https://www.acl-uk.org/

Figure 5.3-3 - Comparison of Slot Demand with Declared Capacity (Summer 2020)



Note: Green bars represent demand by airlines for slots and grey bars show the available capacity

Conclusions on Capacity and Demand at Peak Times

5.3.17 The underlying demand from airlines for slots throughout the day is strong with significant levels of pent-up demand today and further demand forecast in the future. With only a modest increase in peak hour capacity being made available by the Northern Runway (increase from 55 to 69 ATM/hr), it is clear that this capacity would be readily filled by the much larger underlying market demand across the London airports.

5.4. Overall Conclusions on Need for Growth at Gatwick in response to Passenger Demand

5.4.1 With aviation demand returning to pre-pandemic levels, capacity constraints are once again becoming evident again across the London airports. The latest Government outlook for aviation demand remains strong and will result in demand significantly exceeding supply unless substantial new airport capacity is delivered. Gatwick's Northern Runway proposal provides an opportunity to effectively serve part of this unmet demand and serve a wide range of market segments including long and short haul as well as low cost and full service airlines[38].

[38] Gatwick already serves various market and airline segments. The growth under the NR will facilitate further growth.

6 Future Demand Forecasts

6.1. Introduction

6.1.1 This Chapter explains the demand projections that are expected to respond to the Proposed Development.

6.1.2 First, the basis on which the future demand forecasts have been compiled is set out. An overview is then provided of the 'Baseline' Case (i.e. the forecasts of how Gatwick would grow in the future if the Project were not to proceed), followed by an overview of the Northern Runway Project Case forecasts (i.e. the additional air traffic that would serve Gatwick with the Project) comparing these forecast with the baseline forecasts - enabling a comparison of the forecasts in both cases on key matters such as passenger numbers and types, air transport movements numbers and types, fleet types, airport employment etc. Finally, information is presented on sensitivity case forecasts that have been prepared to allow consideration to be given to how economic impacts and environmental effects could change in the event of different assumptions about key issues such as the rate of growth, aircraft fleet changes and growth at other airports, including if a third runway was to be developed at Heathrow.

6.1.3 Further detailed information is provided in the Forecast Data Book provided as Appendix 4.3.1 of **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1)

6.2. The Basis of the Forecasts

6.2.1 The air traffic forecasts in support of the Project have been prepared jointly by GAL's in-house airline relations and marketing and research teams and ICF, one of the UK's foremost experts in air traffic forecasting.

6.2.2 Forecasts have been prepared for two main cases - the 'Existing Runway Case' and the 'Northern Runway Project Case':

The Existing Runway Case forecasts assume that the Northern Runway Project was not to proceed (i.e. they are based on continued growth of Gatwick Airport through further use of its existing main runway (referred to as the 'Baseline Case')

Northern Runway Project Case forecasts project how the airport is expected to increase operations with the Project (i.e. bringing Gatwick's existing northern runway and proposed infrastructure into operation alongside the existing main runway and operating the two runways simultaneously as proposed (referred to as the 'Northern Runway Case')).

6.2.3 These main cases are referred to as the 'Core' Forecasts.

6.2.4 The forecasts have been prepared through a combination of bottom up and top down forecasting methodology. The bottom up approach is useful for a capacity constrained airport such as Gatwick and provides a detailed picture of how the airport and its airlines would respond to an release of capacity in terms of future traffic mix, informed by discussions with airlines and slot

applications. The top down approach[39] provides useful context around the wider London system demand levels and constraints at other airports.

6.2.5 In preparing the forecasts, regard has been had to the importance of having a realistic view of the level and characteristics of air traffic growth that would occur at Gatwick, whilst also ensuring that the environmental impacts of Gatwick's growth, some of which, such as noise, traffic and carbon, rely heavily on the forecasts, are not understated.

6.2.6 Forecasts for each of these two cases have been prepared for four primary assessment years – 2029, 2032, 2038 and 2047:

- 2029: represents the forecast year the northern runway would become operational (and therefore the first point at which effects arising from dual runway operations would occur)..
- 2032: an interim assessment year (and the forecast surface access improvements opening year).
- 2038: representing the year in which the development works as part of the Project are forecast to be completed.
- 2047: representing the long-term forecast year and to meet a specific requirement of guidance in the Design Manual for Roads and Bridges to assess impacts 15 years after the last of the key highways works associated with the Project are due to be completed.

6.2.7 For the purpose of the core forecasts, Heathrow and Luton are assumed to continue operating at their current planning caps with only Stansted offering notable headroom for growth reflecting the recent consented lifting of its previous 35mppa planning cap allowing growth to 43mppa. This approach avoids criticism that impacts have been underestimated but is also consistent with the principle that other planning and investment decisions cannot be prejudged. [40]

6.2.8 By 2029, Gatwick is forecast to be operating in an even more capacity constrained environment than it experienced pre-COVID-19. By 2029 Government forecasts indicate that unconstrained London passenger demand will be 21% above that of pre-COVID-19 levels[41].

6.2.9 The Northern Runway is anticipated to become operational in 2029 and, following a phased release of capacity, it is expected that Gatwick will once again return to a constrained environment with excess demand that cannot be fully satisfied. By 2032 Government forecasts predict London demand to be over 230mppa, more than 50m passengers above 2019 levels[42], whilst the Northern Runway Project is likely to cater at that time for an increase of some 13m passengers.

6.2.10 In the context of the total London market where, as has been set out in Chapter 5, demand is forecast to increase by 128 million from 181 million in 2019 to over 300 million in 2050, the Project is projected to deliver a modest increase in capacity.

[39] Informed by UK Government Jet Zero Forecasts, 2022
[40] This principle is apparent in the Secretary of State's decision letter at Manston Airport in August 2022 (at paragraphs 95 -102) https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020002/TR020002-006369-220818%20-%20Manston%20Airport%20PA08%20Decision%20Letter.pdf
[41] Jet Zero growth for UK assumed to be relevant for the London aviation market. https://www.gov.uk/government/consultations/jet-zero-updated-evidence-and-analysis-to-inform-our-strategy-for-net-zero-aviation. Compares 2029 prediction vs JZ baseline of 2018
[42] Applying UK Jet Zero growth to London baseline https://www.gov.uk/government/consultations/jet-zero-updated-evidence-and-analysis-to-inform-our-strategy-for-net-zero-aviation

6.2.11 Top down forecasts for demand and capacity projections confirm that demand will exceed supply in the London aviation market. To understand the detailed traffic mix and airline operations expected at Gatwick in the long term, a bottom-up approach has been used to prepare the detailed air traffic forecasts at Gatwick. Understanding the nature of the traffic including the potential market mix, airline and aircraft types and the mechanisms through which new capacity is released provided a more robust profile of the future demand and its characteristics expected at Gatwick in the long term.

6.2.12 Further information is provided in the 'Markets and Pipeline' report, provided as Annex 6 of **ES Appendix 4.3.1: Forecast Data Book** (Doc Ref. 5.3). In summary:

- the bottom-up approach considers the key long-term drivers for a constrained airport's performance, capturing the airline and market mix as well the potential future fleet composition and operational performance. For example, the impact of more long haul year-round air traffic is not readily captured by a top-down model[43] unless supported by such bottom-up assumptions.
- this approach is underpinned by market intelligence and frequent dialogue GAL has with many carriers including current airlines already serving Gatwick who are seeking to expand their services and future airline targets. These provide a sound basis for understanding the pipeline of demand that Gatwick will serve in the future. This incorporates a wide range of carriers including full service as well as (ultra) low-cost carriers and provides a balanced view for the potential demand expected to use Gatwick in both the Baseline and Northern Runway cases. These carriers (current and future) are expected to continue serving a diverse and expanding network. For example, pre-COVID-19, new long haul routes to China and other parts of Asia had been added and post-COVID-19 these trends and demand for new services are starting to return. Gatwick's haul network continues to be the most extensive across all the London airports with an evolving mix of carriers adding new competition on current markets or opening new routes.
- long haul market forecasts have been prepared for six worldwide regions of focus – North America, Asia, China, Central and South America, Africa and Middle East as markets where Gatwick is actively targeting airline growth.
- for each region, Gatwick's assumed growth assumptions were compared to market level forecasts for each region.
- for example, taking North America and assuming <1.5% growth in demand until Gatwick's Northern Runway is operational would imply a further 4+mppa of demand in the London market by 2032. In this case Gatwick's air service development team have assumed that an additional 7 services[44] would be in operation by 2032. The growth assumed by Gatwick represents more than 30% of the unconstrained demand growth. With other airports (e.g. Heathrow) unable to meet all of this pent up demand, assuming this level of growth at Gatwick is considered reasonable. For context, Gatwick added >2mppa (12 daily services) to North America in the 2014-2019 period.
- short haul forecasts are less granular with domestic demand split out separately. Given Gatwick's leading levels of service to European destinations and the wide range of routes served by Gatwick's based airlines, some segmentation was used to reflect different carrier types e.g. based LCC, away based Leisure or FSC. At a regional level the mix of traffic

[43] Note: A top down view was prepared for long term growth prospects by regions. This aligns well with growth expectations for the London and wider UK market as set out by previous DfT and Jet Zero forecasts.
[44] 7 services equates to 7 daily rotations or 14 ATMs

within Europe was assumed to remain comparable to today's throughput. For example, in the 2010-2019 period the splits of traffic between North, South, East and Western European destinations remained within 1% point during which Gatwick's airline mix and traffic volumes evolved significantly[45].

- the analysis of new routes by geographic region has focused on the period to 2032 - the first year in which the Northern Runway would be operating close to its capacity during the peak months. Whilst further growth is forecast to materialise beyond 2032 it is assumed to be much more modest.

6.2.13 Further specific information on the assumed development of the route network serving Gatwick from different world regions is provided later in the sections below on Growth at Gatwick in Baseline Case and Growth at Gatwick with the Northern Runway Project.

Sensitivity Test Forecasts

6.2.14 Because there is inherent uncertainty in predicting long term aviation growth, forecasts have also been prepared to cover a number of different 'sensitivity' scenarios.

- Firstly, a 'Slower Growth' sensitivity forecast has been prepared, which adopts a more conservative view of growth at Gatwick. This is used to test the impact that slower-growth than the core forecasts would have on the economic benefits attributable to the Project such as employment generation.
- Secondly, a 'Slower Fleet Transition' sensitivity case has been prepared. This sensitivity assumes that the rate of transition of Gatwick's airline fleet takes longer to transition to next generation aircraft. It has been used to understand how noise, air quality and carbon impacts could be greater if the turnover of aircraft types to next generation aircraft is slower than expected in the core forecasts.
- Thirdly, forecasts have however been prepared for Gatwick that also assume a 3rd runway is developed at Heathrow.
- Consideration has also been given to the impact of further growth at Luton Airport.

6.2.15 In each sensitivty, the scale of demand forecast for Gatwick exceeds the capacity that can be achieved at the airport in the absence of the NRP.

6.2.16 Further information on how these sensitivity cases affect traffic at Gatwick is provided later in this chapter and in the Forecast Data Book.

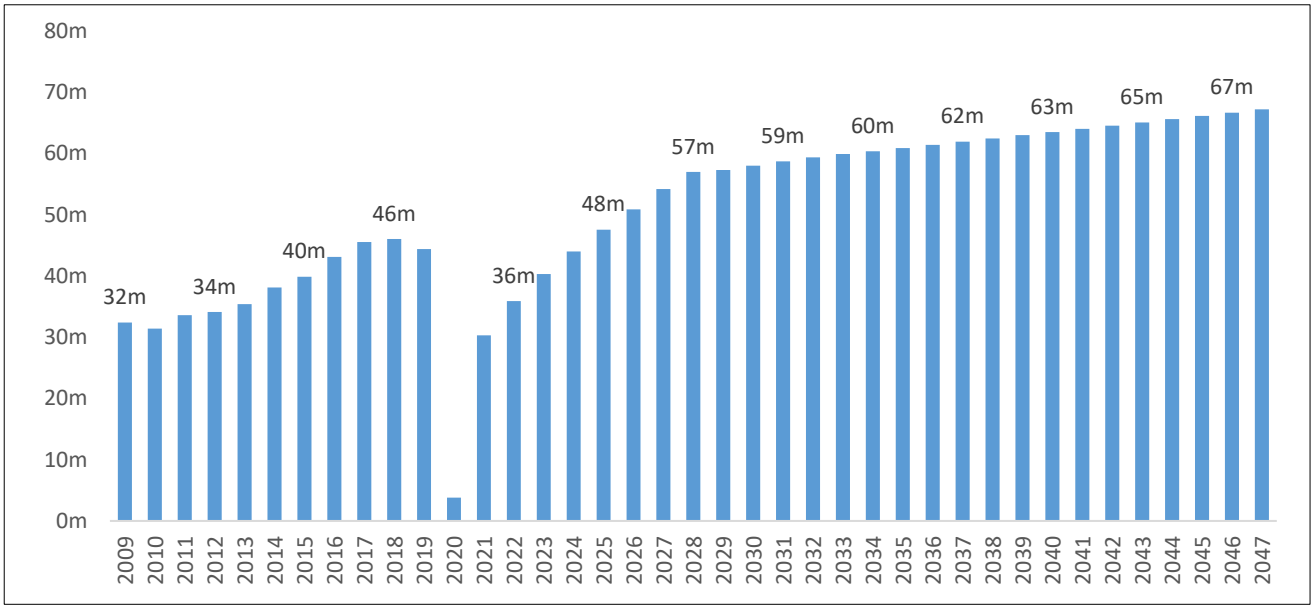
6.3. Growth at Gatwick in Baseline Case

6.3.1 Unlike other London airports Gatwick is not subject to passenger or air transport movement caps. Even without any further capacity developments, Gatwick will continue to be able to accommodate some further growth with its existing infrastructure. First, demand across Gatwick's core and wider catchment is forecast to grow in line with wider UK aviation projections of around 1.7% per annum in the long term. Secondly, the ongoing supply side trends highlighted earlier, including larger and fuller aircraft, will continue to deliver increased annual throughput.

6.3.2 In the Baseline Case it is estimated that Gatwick will grow to be able to serve some 67.2mppa in 2047- an increase of around 20 million passengers (30%) on 2019 levels.

[45] In 2019 Gatwick's European ATMs were broken down as follows, 58% S. Eur, 23% W. Eur, 14% N. Eur and 5% E. Eur.

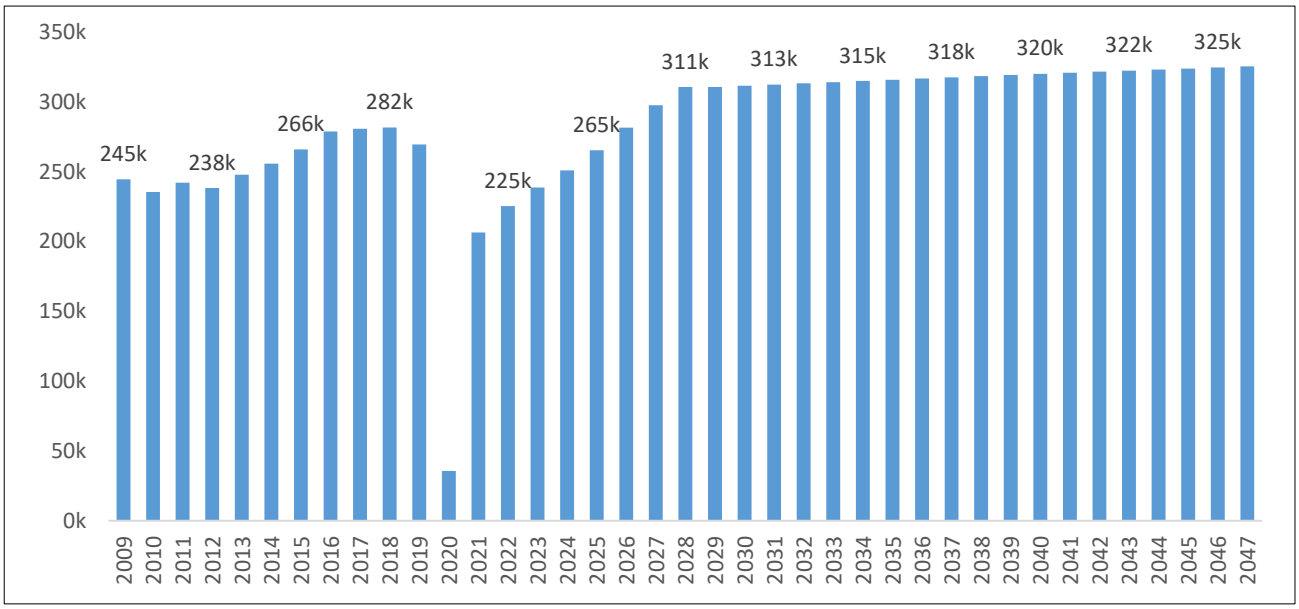
Figure 6.3-1 - Gatwick Passengers - Base Case



Note: Gatwick forecasts prepared in Financial years (FY32 for YE Mar33 is shown as 2032).
Some figures for historical analysis provided in calendar years accounting from minor differences

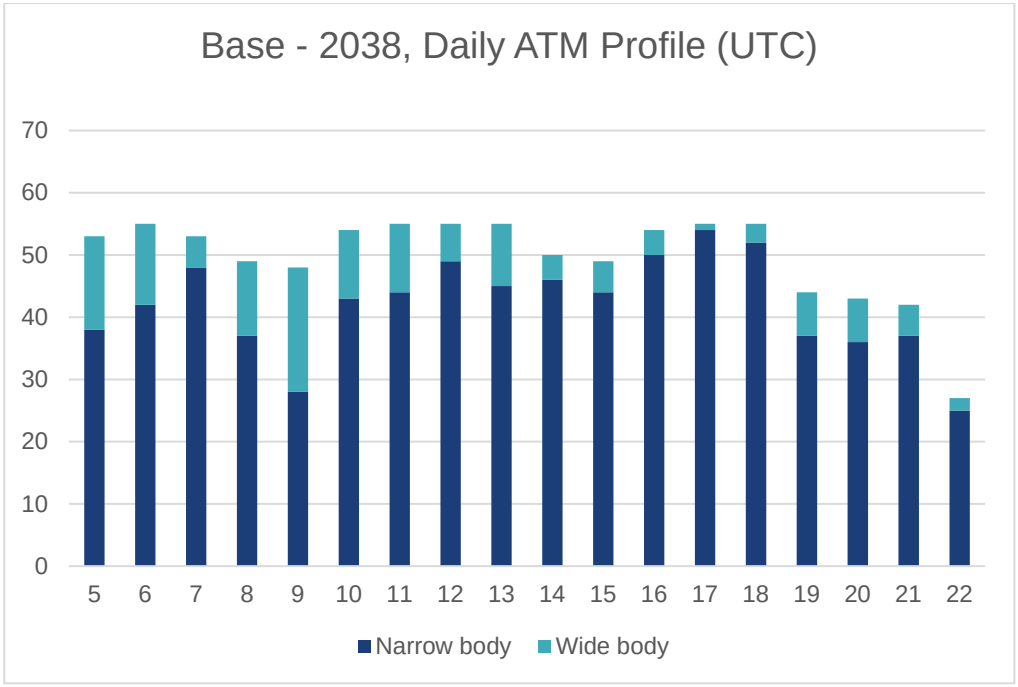
6.3.3 These passengers will be accommodated on approximately 326,000 commercial ATMs, reflecting an increase of around 10% compared to 2019's throughput. This increase in movements will be achieved through better year-round slot utilisation and the number of hours operating at 55 ATM per hour will be extended. Up-gauging (the use of larger aircraft) and load factor growth will also support the higher passenger volumes. These trends include the impact of changes in the market mix at Gatwick, for example growth in long haul markets (larger aircraft types and less seasonal operations) and reductions in seasonal charter air traffic.

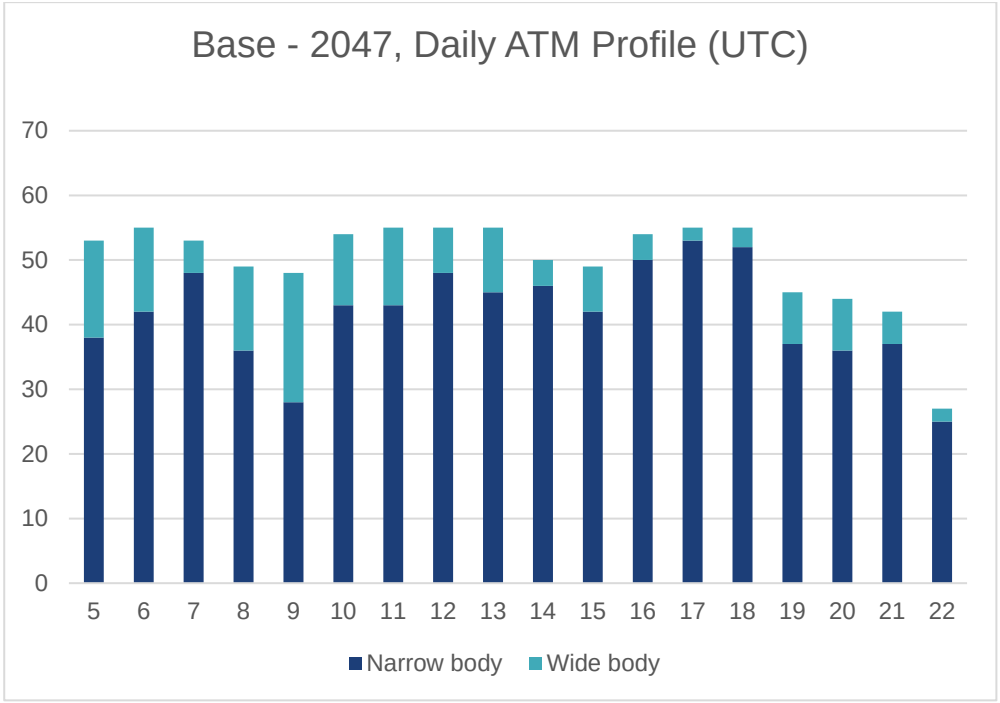
Figure 6.3-2 - Gatwick Air Transport Movements - Base Case



6.3.4 Over the forecast period limited 'new' runway capacity is assumed as the current maximum throughput of 55 ATMs/hour is assumed to remain in the future. However, there is scope to improve performance and achieve these hourly levels of throughput on a more consistent basis throughout the day. In the busiest days it is therefore expected that the number of hours where the runway will be scheduled to handle 55 movements will increase from 2 hours per day in 2019 to 6 hours per day in 2038 and 2047. The Busy day schedules for the Baseline Case in 2038 and 2047 are shown below.

Figure 6.3-3 - Gatwick Runway Profiles for Busy Day in 2038 and 2047, Core Hours (UTC)





6.3.5 Growth in the Baseline Case from the 2019 throughput of over 46 mppa to the future forecast of 67 mppa in 2047 (as shown in Figure 8.2.4) is anticipated to come from three main and well-established factors:

1. Growth in Runway Utilisation in Off Peak Periods
2. Up-gauging of Fleet over Time to Larger Aircraft
3. Higher Average Load Factors

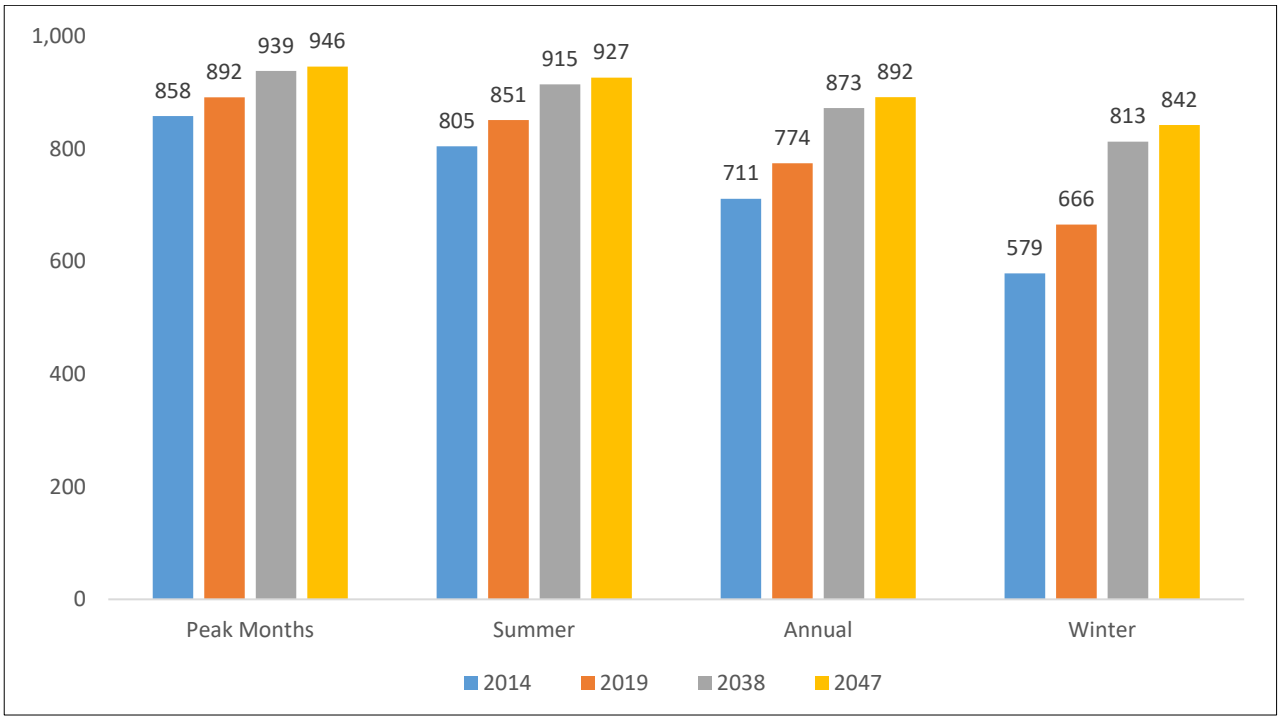
6.3.6 Each of these are considered further here:

1. Growth in Runway Utilisation in Off Peak Periods

6.3.7 In the busy summer months (July, August and September), Gatwick is often already operating at, or close to, its peak capacity. In the Baseline Case GAL is anticipating only modest growth during this period as daily commercial ATMs are forecast to increase by 6% from an average of around 900 in 2019 to 946 in 2047.

6.3.8 For the summer season (Apr-Oct), daily commercial ATMs are forecast to increase 9% from an average of 851 in 2019 to 927 in 2047. In contrast, the less utilised winter period is forecast to increase from an average of 666 in 2019 to 842 by 2047. By 2047, this represents an increase of 27% versus 2019. By comparison, Gatwick's winter utilisation has increased by 15% in just the 5 years to 2019 as daily commercial ATMs have grown from 579 to 666.

Figure 6.3-4 – Gatwick Daily Movement Growth – Base Case



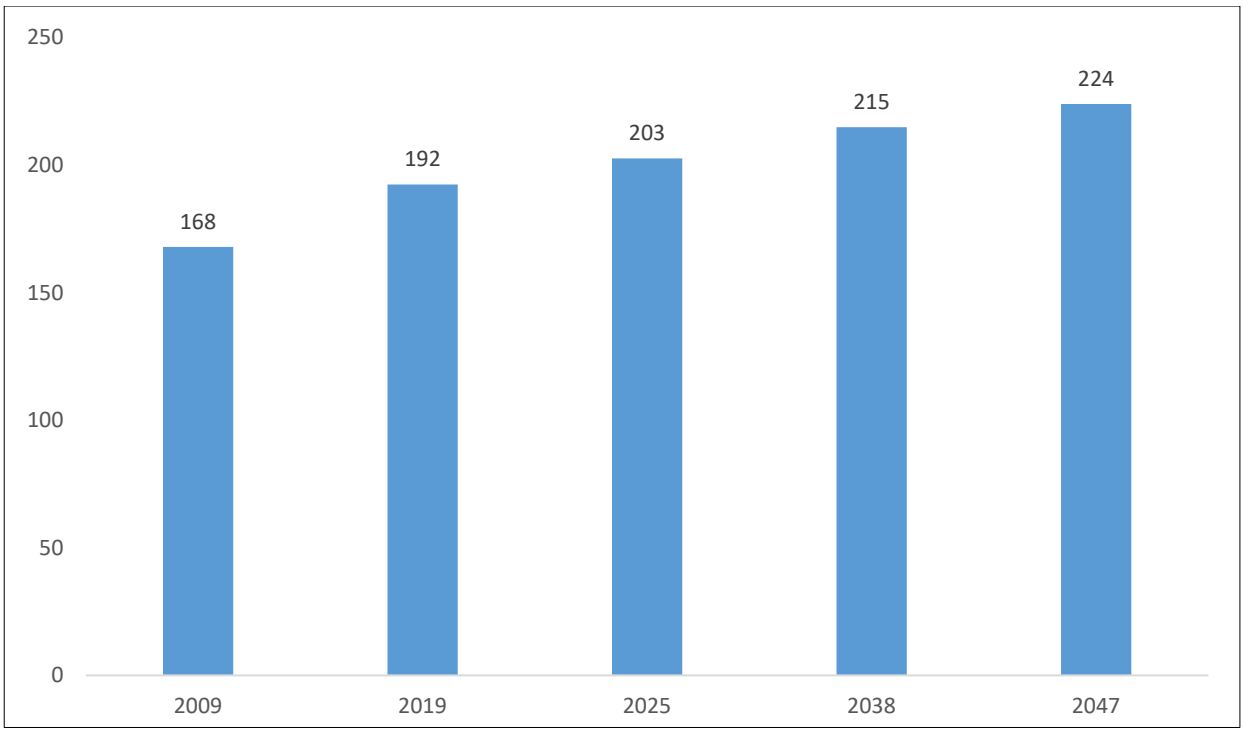
6.3.9 The increase in runway utilisation during off peak periods will result in annual air traffic profiles flattening as demand spreads to the less utilised periods of the year, although some seasonality

would remain. In 2047, busy month commercial ATMs are forecast to be 6% higher than the annual average compared to 17% in 2019 and 23% in 2014.

2. Up-gauging of Fleet over Time to Larger Aircraft

6.3.10 The second important and year-round factor that will drive passenger growth is the trend for airlines to up-gauge their fleets with larger aircraft. Seats per ATM are expected to increase from an average of 192 in 2019 to 224 in 2047, as shown in the chart below.

Figure 6.3-5 – Average Seats per ATM – Base Case



6.3.11 Two good examples of this can be seen in Gatwick's two largest airlines – easyJet and British Airways – which currently account for over 60% of Gatwick's passengers.

6.3.12 For example, easyJet is moving towards Airbus A320 and A321 aircraft (with 186 seats and 235 seats respectively) from the current A319 (156 seats) and A320 fleet (previously 180 seats). Similarly, British Airways is continuing to 'densify' its Boeing 777 fleet alongside longer term fleet replacement plans for their short haul fleet (e.g. the Boeing 777 densification resulted in seat configurations growing from 220/275 to 232/336[46]) which will result in significant increases in average seats per aircraft.

6.3.13 New long haul markets and the usage of Boeing 787s (often replacing 757/767) and Airbus A350s entering airline fleets are other examples of airlines up-gauging/densifying at Gatwick over the long term.

[46] BA have operated a split fleet of Boeing 777 aircraft with different configurations. The lower seat counts reflects a higher share of premium seating which takes up a greater space compared to economy seating

6.3.14 The above changes are already underway for easyJet and British Airways and other large carriers such as Tui, and it is realistic to assume this would continue, especially as new slot capacity at UK airports continues to become scarcer and the UK aviation market demand continues to grow.

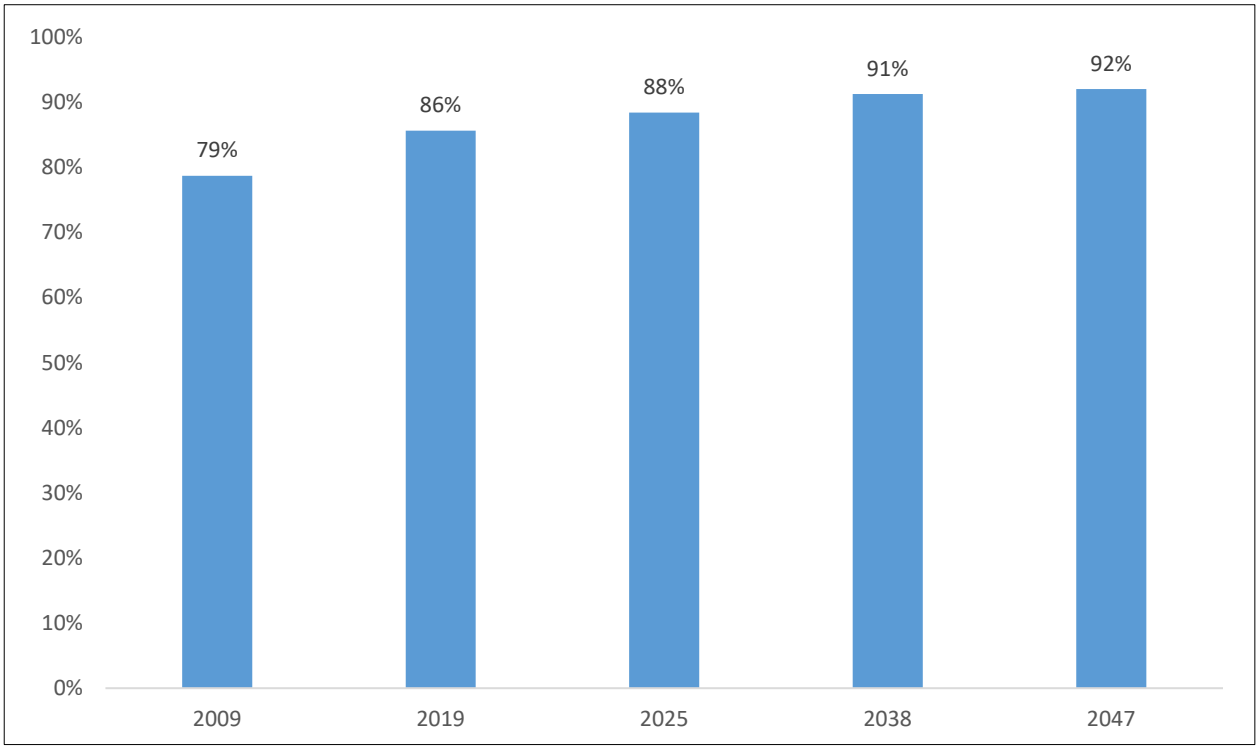
6.3.15 Fleet orders also support further up-gauging, Airbus and Boeing have seen a significant shift to orders of larger aircraft types within their narrow body offerings. For example, orders of the larger Airbus A321 sized aircraft account for the majority of Airbus' order book for the A320 series aircraft whereas historically the A321 accounted for under 25% of deliveries from the same series of aircraft.

3. Higher Average Load Factors

6.3.16 Allied to the increase in average aircraft size is a predicted increase in average seat occupancy rates across the year, also referred to as load factors. In 2019, average load factors ranged between 78-92% (averaging 86%) across the year and have increased from 79% to 86% over the previous 10 years. This increase has been supported by the growth of LCCs who have been actively increasing load factors across their networks.

6.3.17 Over the next 20 years load factors are forecast to increase at a slower rate, with the gains seen in the last 10 years not being repeated. Factors such as seasonality, directional imbalances and 'no shows' would continue to present challenges for airlines to increase their seat occupancy rates further. By 2047 and beyond, average load factors are forecast to increase to 92% which is comparable to Gatwick's most efficient carriers operating today.

Figure 6.3-6 – Average Load Factor – Base Case



6.3.18 When combined, the aircraft size and load factor assumptions result in the average number of passengers per flight increasing from the base of 165 (in 2019) to 206 in 2047.

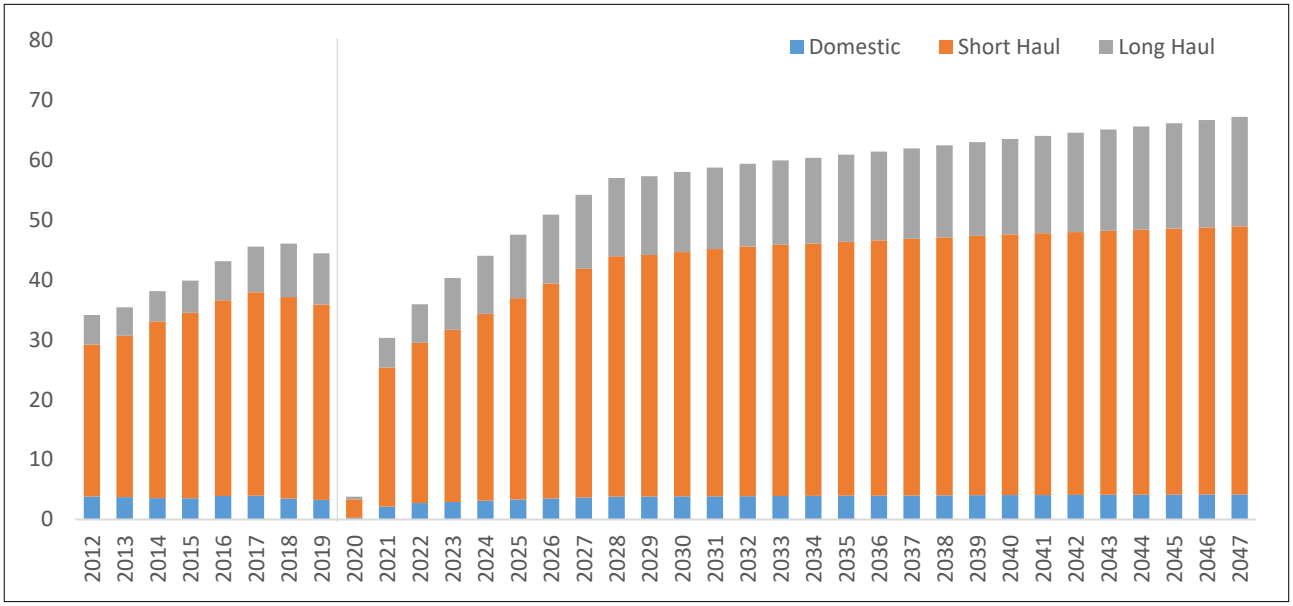
6.3.19 The resulting annual passengers shows volumes passing pre Covid levels in 2025 when they reach 48mppa before growing to c.62m in 2038 and c.67m in 2047.

Market Growth in the Baseline Case

4. Market Mix

6.3.20 Gatwick's traffic mix is split between domestic, short haul and long haul and is forecast to continue to evolve. In 2019, 19% of Gatwick's passenger demand was long haul, 73% from short haul markets and the remaining 7% from domestic markets. Over the 5-year period leading up to 2019 Gatwick's share of long haul traffic grew from 13% to the 19% achieved in 2019. In absolute terms long haul passengers grew from under 5m to 9m reflecting a CAGR of 12%, which is ahead of the wider London average.

Figure 6.3-7 - Gatwick Annual Passengers, Base Case (millions) – by haul



6.3.21 Looking ahead, growth in long haul volume is forecast to continue taking share away from domestic and short haul markets. Long haul demand is forecast to increase to a 23% share by 2030 and 27% by 2047. In contrast short haul and domestic volumes are forecast to decline to 67% and 6% of total volumes respectively.

Table 6.3-1 - Gatwick Passengers, Market Mix (%)

	2019	2029	2032	2038	2047
Domestic	7%	7%	7%	6%	6%
Short Haul	73%	70%	70%	69%	67%
Long Haul	19%	23%	23%	25%	27%
Total (millions)	**46.6**	**57.3**	**59.4**	**62.4**	**67.2**

6.3.22 Within these market segments further disaggregation is used to support the busy day schedules taking into account which routes and airlines are likely to favour different periods of the day.

Within the long haul segment growth[47] is assumed to be driven by new routes and additional frequencies to markets in North America and Asia compared to the 2019 baseline. By 2032 these two markets account for a further 27 daily movements. A further 12 long haul movements are assumed in markets including C&S America, Africa and the Middle East.

6.3.23 A summary of the approximate levels of growth assumed by region are provided in the following table. In the baseline long haul daily ATMs are forecast to grow by more than 40 daily movements in the peak months, which is equivalent to approx. 20% of the future demand growth being forecast in this segment.

Table 6.3-2 – London and Gatwick Long haul ATM Growth, Base (Daily ATMs Peak Months)

	London Market Demand Growth 2019-2032	Gatwick Growth Assumed 2019-32	Gatwick %of Unconstrained
Asia	~80	<15	<20%
N. America/Caribbean	~55	<15	~25%
C&S. America	~10	<5	~40%
Africa & Middle East	~50	<10	<20%

6.3.24 Within the short haul and domestic markets relatively limited growth is assumed to occur in the peak months reflecting the binding capacity constraints. No growth in services is assumed in the domestic market whilst approx. 10 new ATMs are assumed to arise from markets across the EU, Non-EU countries and North African destinations.

Passenger Mix

6.3.25 Passenger type forecasts have been prepared for Gatwick's demand (excluding transfer passengers) taking into account splits involving UK / Foreign residency as well as business / leisure purpose as the primary reason for travel. In the baseline data, UK residents accounted for 76% of total volume whilst business travellers accounted for 14%.

6.3.26 Over the last decade Gatwick's traffic profile has remained relatively stable despite significant growth from LCCs and long haul markets. The future mix is assumed to remain comparable to the 2019 baseline with a slight shift away from UK and business travellers. Whilst the airlines and markets using Gatwick in the future will ultimately determine the future mix of traffic, there will be significant levels of pent-up demand from business and leisure travellers in the wider London market.

Table 6.3-3 - Gatwick Passengers, Passenger Mix (million)

	2019	2029	2032	2038	2047
UK Business	4.0	4.7	4.9	5.1	5.4
UK Leisure	29.9	36.7	38.1	40.1	43.3
UK Total	**33.8**	**41.4**	**42.9**	**45.2**	**48.7**
Foreign Business	2.1	2.6	2.7	2.8	3.0
Foreign Resident	8.8	10.9	11.3	11.9	12.9
Foreign Total	**10.9**	**13.5**	**14.0**	**14.7**	**15.9**

[47] High level demand forecasts for each region were prepared and align with overall levels of UK demand growth by 2032

Passenger Profile

6.3.27 In 2019, transfer passengers were estimated to account for approximately 4% of demand[48], equivalent to 1.8 million passengers. These volumes reflect flows via traditional connecting itineraries.

6.3.28 No significant change is forecast in the future with Gatwick remaining a predominantly point-to-point airport. Therefore, the number of connecting passengers is forecast to grow in line with the total growth as they maintain a share of around 4% of total demand.

Table 6.3-4 – Transfer Passengers, (millions and %)

	2019	2029	2032	2038	2047
Transfers	1.8	2.5	2.5	2.6	2.6
% of Total	3.9%	4.5%	4.4%	4.3%	4.0%

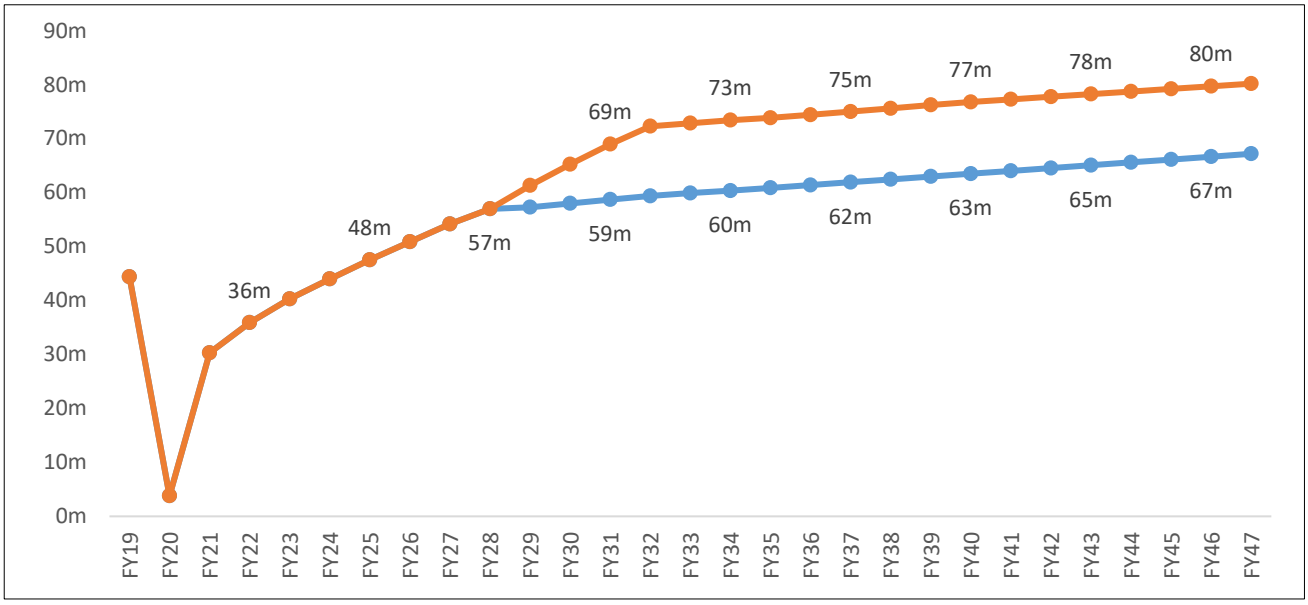
6.4. Growth at Gatwick in the Northern Runway Case

6.4.1 The Project would allow both of Gatwick's runways to be used concurrently. This would allow Gatwick to handle additional aircraft movements. The northern runway would be used for departing aircraft (mostly Code C or smaller) whilst the main runway would be capable of handling all movements as it is today. This has the potential to add significant levels of capacity and accommodate some of the ongoing growth in demand for aviation across the wider UK market.

6.4.2 It is estimated that Gatwick will grow to be able to serve some 80.2 million passengers in 2047- around 13 million passengers more than the Baseline Case.

[48] IATA Airport/GAL 2019

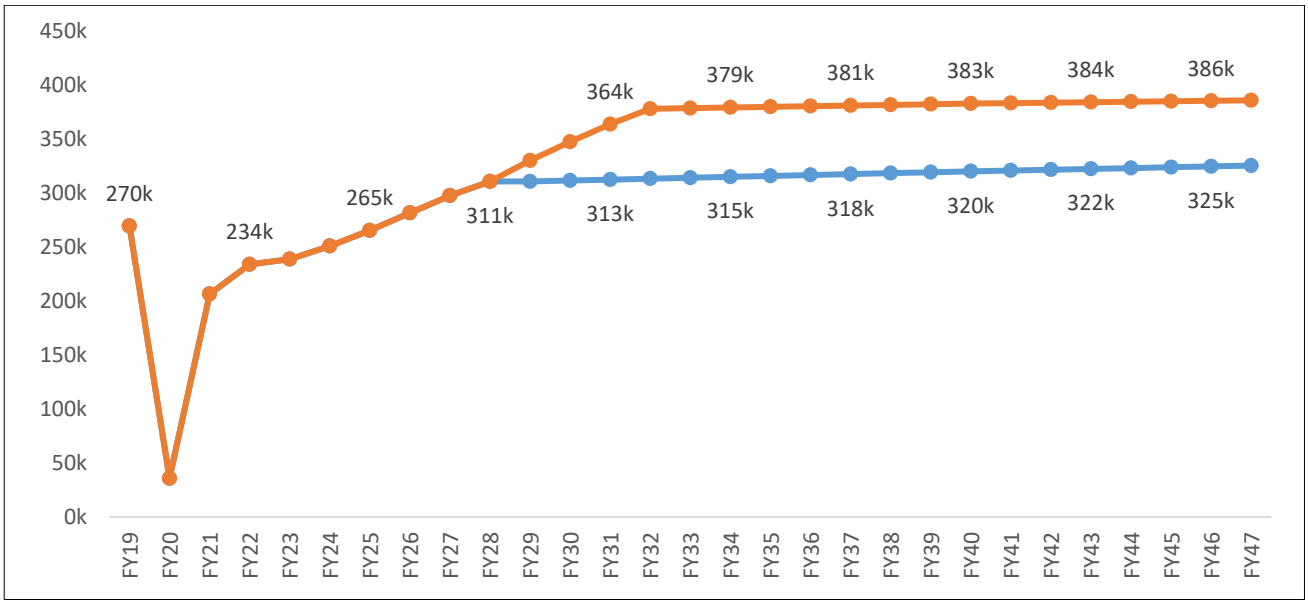
Figure 6.4-1 – Gatwick Passengers – Base and Northern Runway Case



Note: Recovery profile prepared mid-2020 with short term updated with actuals. FY22 (YE Mar 2023) is an estimate as of Jan'23.
Source: CAA/GAL Statistics

6.4.3 The number of commercial ATMs are forecast to increase to approximately 386,000 in 2047 compared to 326,000 in the Base case.

Figure 6.4-2 – Gatwick ATMs – Base and Northern Runway Case

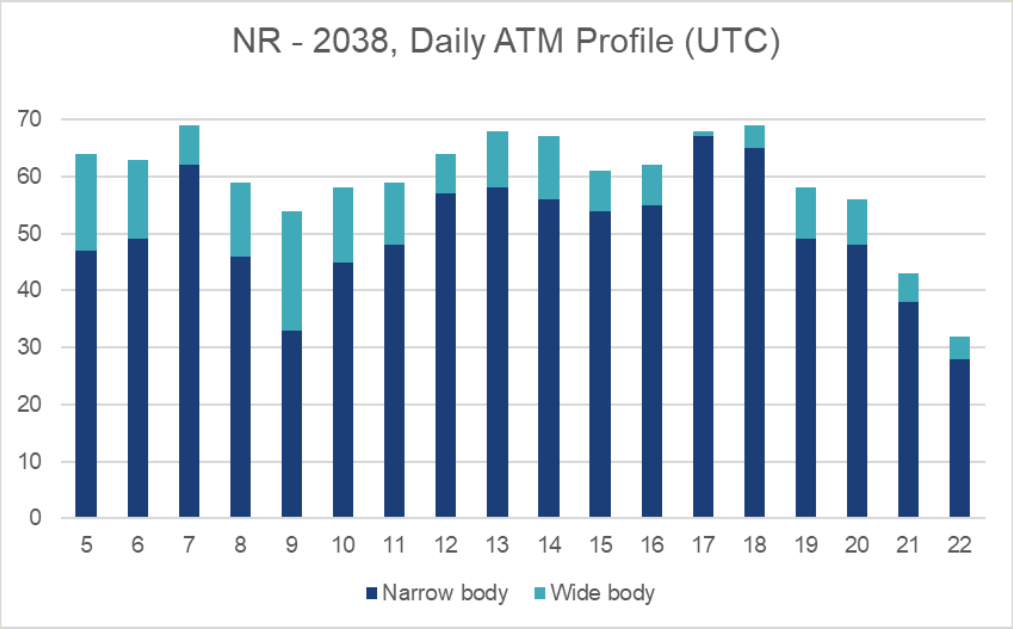


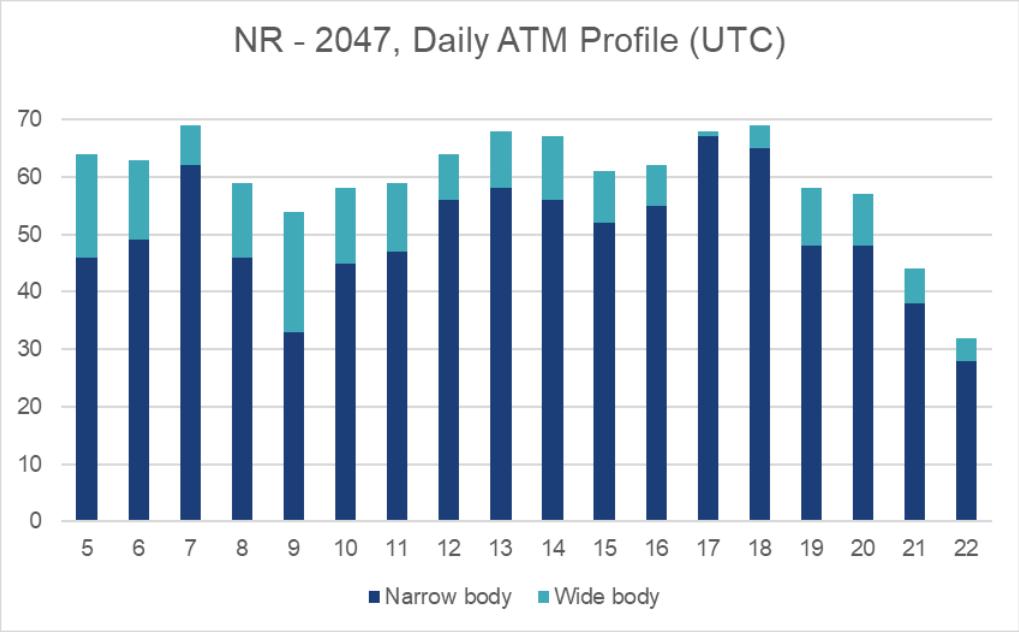
Note: Recovery profile prepared mid-2020 with short term updated with actuals. FY22 (YE Mar 2023) is an estimate as of Jan'23.
Source: CAA/GAL Statistics

Hourly Runway Capacity

6.4.4 Hourly capacity is assumed to increase from 55 movements in the Baseline Case to 69 movements per hour in peak periods with the Northern Runway in operation. Busy day schedules for the Northern Runway case in 2038 and 2047 are provided in Charts below.

Figure 6.4-3 – Gatwick Runway Profiles for Busy Day in 2038 and 2047, Core Hours (UTC)





6.4.5 The increase in runway capacity will enable Gatwick to grow its busy day and year-round air traffic profile significantly.

Growth in Runway Utilisation in Off Peak Periods

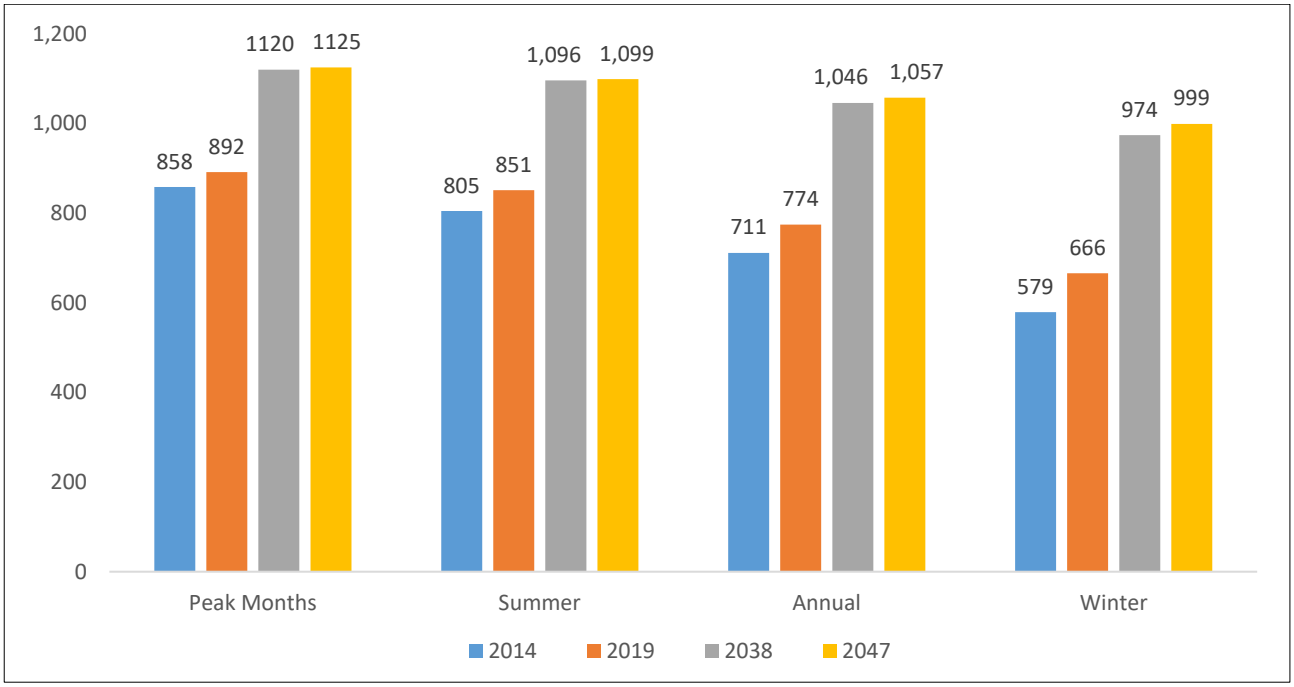
6.4.6 As per the Baseline case the Northern Runway case is forecast to see an improvement in year round utilisation. Traffic that is forecast to make use of the incremental capacity is likely to reflect a greater share of year round operations including growth from long haul markets.

6.4.7 In the Northern Runway Case the peak months are forecast to grow 26% to over 1,100 daily movements in 2038. This compares to just 6% growth in the peak periods under the baseline forecasts.

6.4.8 For the total summer season (Apr-Oct), daily commercial ATMs are forecast to increase 29% from an average of 851 in 2019 to 1,099 in 2047. This compares to 9% under the baseline forecasts.

6.4.9 In contrast, the less utilised winter period is forecast to increase from an average of 666 in 2019 to 999 by 2047 an increase of 50%. This compares to 27% growth under the baseline forecasts.

Figure 6.4-4 – Gatwick Daily Movement Growth – Northern Runway Case



Aircraft Size and Load Factors

6.4.10 As in the Baseline case, the NRP is also expected to attract larger and fuller aircraft. By 2047 average aircraft are forecast to have increased to 227 seats in the Northern Runway Cases (very slightly higher than the 224 in the Baseline Case). Average load factors are also assumed to be the same as in the Baseline Case at 92% of seating capacity.

6.4.11 Growth in average loading and aircraft size through the forecast period is provided in the following table.

Table 6.4-5 – Gatwick Commercial Air Traffic Movements Average Loads

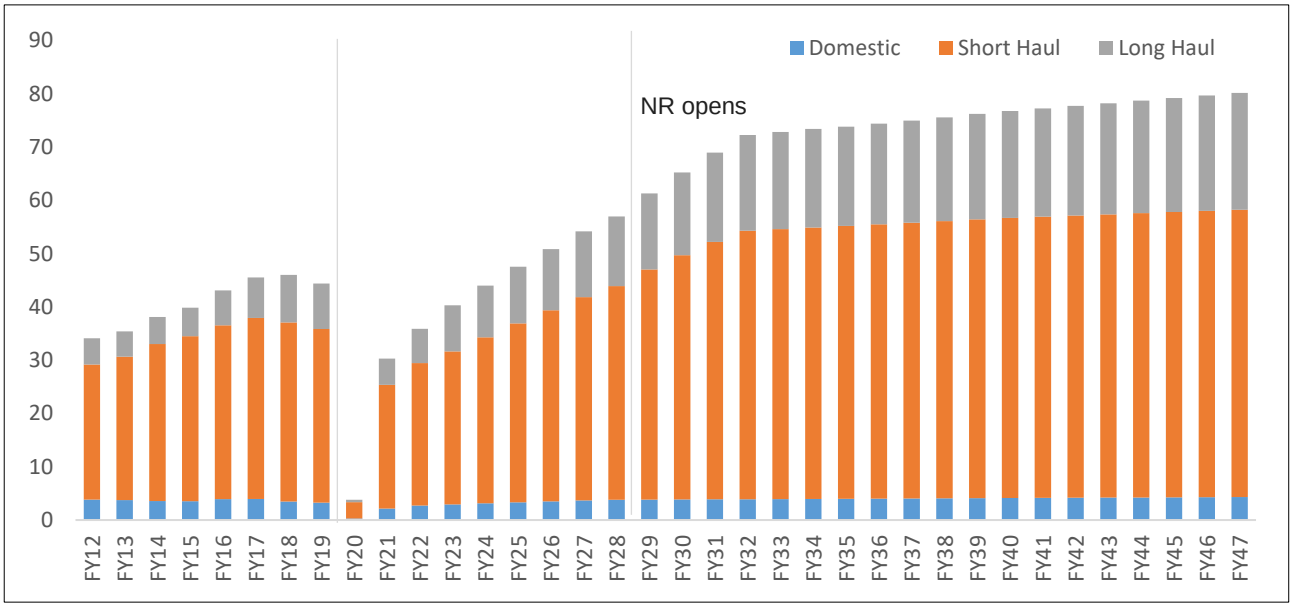
	2019 Actual	2029		2032		2038		2047	
		Base Case	Northern Runway Case	Base Case	Northern Runway Case	Base Case	Northern Runway Case	Base Case	Northern Runway Case
Average Aircraft Loads – Seats	192	206	208	210	213	215	218	224	227
Average Aircraft Loads - %	86%	89%	89%	90%	90%	91%	91%	92%	92%

Market Growth in the Northern Runway Project Case

Market Mix

6.4.12 With the Northern Runway Gatwick's traffic mix is forecast to continue evolving though the new runway capacity presents further opportunity for growth from a range of markets and airlines.

Figure 6.4-6 – Gatwick Annual Passengers, Northern Runway Case (millions) – by haul



6.4.13 When the Northern Runway opens, it is assumed to permit growth across all market segments reflecting the wide range of demand served by Gatwick today as well as pent up demand from a mix of carriers in different regions. Long haul demand is assumed to grow a further 4mppa compared to the baseline scenario meaning this segment will account for approximately 1 in 4 passengers by 2032. Total short haul (inc. domestic) volumes are forecast to increase from 44m in 2028 to 54m by 2032 compared to 46m in the baseline forecasts.

6.4.14 Beyond 2032 some ongoing mix change is forecast with long haul continuing to grow its share of overall demand modestly. By 2047 long haul passengers are forecast to account for 22m or 27% of total demand.

Table 6.4-7 Gatwick Passengers, Market Mix (%)

	2019	2029	2032	2038	2047
Domestic	7%	6%	5%	5%	5%
Short Haul	73%	70%	70%	69%	67%
Long Haul	19%	23%	25%	26%	27%
Total (millions)	**46.6**	**61.3**	**72.3**	**75.6**	**80.2**

6.4.15 Within these market segments further disaggregation is used to support the busy day schedules taking into account which routes and airlines are likely to favour different periods of the day. Greater growth is forecast under the Northern Runway (compared to the Base) reflected by more routes, frequencies and airlines to a wide range of short and long haul markets.

6.4.16 A summary of the approximate levels of growth assumed by region are provided in the following table. In the Northern Runway scenario, long haul daily ATMs are forecast to grow by c75 daily movements in the peak months which is equivalent to 6-61pprox.. 40% of the future demand growth being forecast in this segment. North America and Asia are the main drivers of growth accounting for over 70% of long haul market growth at Gatwick by 2032.

Table 6.4-8 – Gatwick Long haul ATM Growth, Northern Runway (Daily ATMs Peak Months)

	Market Growth 2019-2032	Gatwick Growth 2019-32	Gatwick %of Unconstrained
Asia	~80	~30	<40%
N. America/Caribbean	~55	~25	<50%
C&S. America	~10	~5	~60%
Africa & Middle East	~50	~15	<25%

6.4.17 Short haul market growth is assumed to occur across domestic, EU, Non-EU short haul and North African markets. Once the Northern Runway is open short haul services are assumed to grow by 6-61pprox.. 115 daily ATMs during the peak months, equivalent to c55 daily rotations to be operated by a combination of full service and low cost airlines either based at Gatwick or operating from their overseas bases.

6.4.18 In the 2013-2019 period Gatwick added a similar number of European flights. 114 daily short haul ATMs were added although the number of domestic frequencies did decline in this period. This growth was achieved when only modest levels of runway capacity were added.

Passenger Mix

6.4.19 Like the baseline forecasts, under the Northern Runway case the future traffic mix of Gatwick is assumed to remain comparable to the 2019 baseline with a slight shift away from UK and business travellers. Whilst the airlines and markets using Gatwick in the future will ultimately determine the future mix of traffic, there will be significant levels of pent-up demand from business and leisure travellers in the wider London market.

Table 6.4-9 – Gatwick Passengers, Passenger Mix (%)

	2019	2029	2032	2038	2047
UK Business	4.0	5.0	5.7	6.0	6.3
UK Leisure	29.9	39.2	46.7	48.9	51.9
UK Total	**33.8**	**44.2**	**52.4**	**54.8**	**58.1**
Foreign Business	2.1	2.7	3.3	3.4	3.6
Foreign Resident	8.8	11.7	14.0	14.7	15.6
Foreign Total	**10.9**	**14.4**	**17.2**	**18.0**	**19.1**

Passenger Profile

6.4.20 Like the Baseline forecasts, no significant change is forecast in the future with Gatwick remaining a predominantly point-to-point airport. Therefore, the number of connecting passengers is forecast to grow in line with the total growth as they maintain a share of around 4% of total demand.

Table 6.4-10 – Transfer Passengers, (millions and %)

	2019	2029	2032	2038	2047
Transfers	1.8	2.7	2.7	2.7	2.9
% of Total	3.9%	4.7%	3.8%	3.7%	3.8%

6.5. Cargo

6.5.1 Annual cargo forecasts have been prepared considering Gatwick's evolving air traffic mix. The supply side dynamics of the routes and carriers play a pivotal role in the airport's cargo performance, with long haul widebody movements to markets such as Asia/Middle East providing significant opportunity.

6.5.2 Gatwick's cargo performance has been increasing in recent years reflecting the growth in the number of long haul markets and carriers. Future growth in cargo tonnage is linked to supply side assumptions around the carrier and market types being served.

6.5.3 Published statistics for Gatwick's cargo performance have historically been unreliable, typically understating volumes as a result of many flights reporting zero when in fact they carried material volumes of cargo. GAL has undertaken a one year validation exercise to identify the magnitude of this inaccuracy and correct it. Adjusting for the figure in 2019/20 results in an increase from the reported 118,000 tonnes to 150,000 tonnes (i.e. approx.. 30% higher than the published figures).

6.5.4 Under the Northern Runway case cargo tonnages are forecast to increase to over 200,000 tonnes as the northern runway enters service. By 2047 cargo tonnages are forecast to be approaching 350,000 tonnes per year, nearly 60,000 tonnes more than the Baseline case.

Table 6.5-1 – Air Cargo (thousands of tonnes)

	2019		2029		2032		2038		2047	
	Reported	Adjusted	Base Case	Northern Runway Case	Base Case	Northern Runway Case	Base Case	Northern Runway Case	Base Case	Northern Runway Case
Cargo	118	150	228	251	235	305	254	323	290	348

Core Forecast Conclusions

Baseline

6.5.5 Under the baseline scenario, demand for Gatwick airport will continue to exceed supply reflecting the ongoing underlying demand growth being forecast at an already constrained airport and across the wider London market. The bottom-up forecasts prepared by GAL provide detail on the nature of the future traffic mix and utilisation patterns of the runway. .

Northern Runway

6.5.6 The NRP provides a relatively modest but meaningful uplift in capacity compared to a net new runway. The capability of the NRP at Gatwick is able to deliver an extra 14 peak hour movements compared to the current one runway operation of 55 movements per hour.

6.5.7 Gatwick can deliver its NRP capacity many years ahead of any other potential development schemes where significant uncertainty already exists. Demand for aviation is forecast to continue growing and binding constraints already exist at airports across the London system. Without any development options, significant demand will not be accommodated.

6.5.8 The NRP can accommodate a further 13 million passengers whilst demand for aviation is forecast to grow 70% from a 2018 baseline. This growth would be equivalent to over 100 million passengers in the London market alone.

6.5.9 Whilst long term short falls in airport capacity will remain even with the NRP, Gatwick will be able to provide much needed capacity for a wide range of airlines and markets.

6.6. Sensitivity Cases

6.6.1 A variety of sensitivity cases are set out below. However, in every sensitivity case, forecast demand at Gatwick exceeds the capacity of the future baseline.

Slower Growth Sensitivity Case

6.6.2 Given the inherent uncertainty in preparing long term aviation forecasts a sensitivity forecast based on a more conservative view of growth at Gatwick has been prepared to understand the impact of slower growth on the economic benefits attributable to the Project.

6.6.3 Compared to the Core Forecasts, these slower growth sensitivity test forecasts provide a lower growth scenario, including slower growth from Gatwick's airlines through more conservative

assumptions in relation to average aircraft size, load factors, and the extent of growth outside the peak seasons.

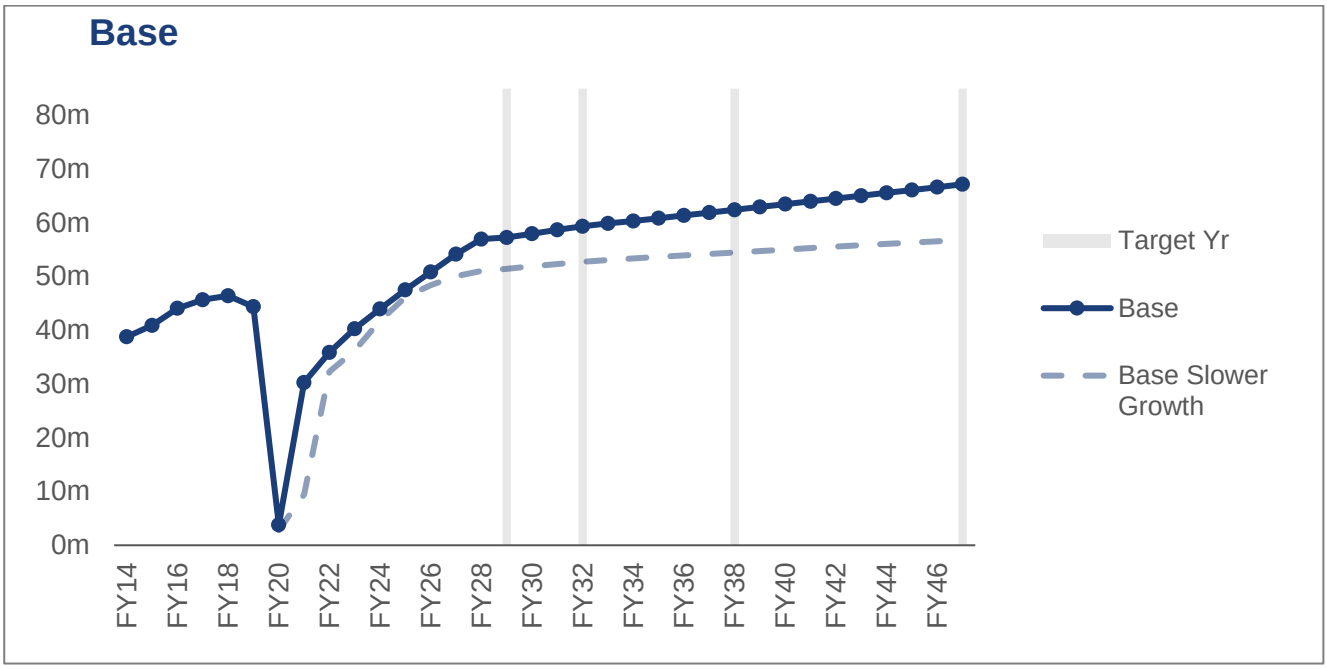
6.6.4 The three key elements of the slower growth sensitivity test forecasts are:

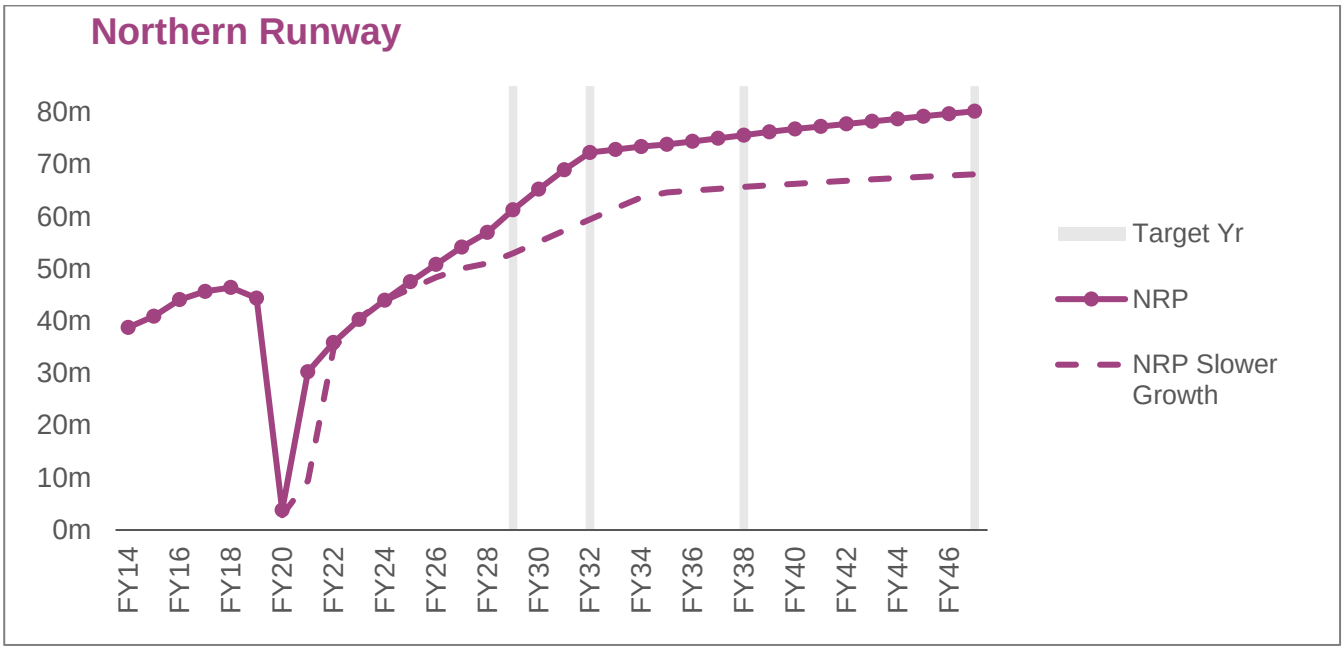
- slower recovery from COVID-19: Return to 2019 levels delayed until FY26/27 compared to FY25/26 in the core forecasts.
- northern Runway assumed to be operating at capacity during peak periods some 6 years after opening, double that in the core Northern Runway Project forecasts.
- long term throughput potential reduced:
  - whilst peak month activity is maintained, the degree of spreading assumed outside of peak periods is reduced significantly, and busy month ratio stays comparable to base year.
  - passenger per ATM drivers are reduced and slightly smaller and emptier aircraft assumptions are made.

6.6.5 In the slower growth sensitivity test passenger demand in the baseline case and Northern Runway cases is predicted to be some 15% lower than the core forecasts – 57m in the baseline case (compared to 67m) in 2047 and 68m in the Northern Runway case (compared to 80m)

6.6.6 In this sensitivity case, Gatwick is assumed to remain constrained with peak season runway throughput similar to the baseline. The lower throughput achieved is reflective of less efficient use of Gatwick's runway capacity including smaller and emptier aircraft as well as less filling in of the off-peak season capacity. This scenario highlights the importance of understanding the bottom-up supply side assumption around runway capacity and throughput.

Figure 6.6-1 – Passenger Forecast Comparisons (Slower Growth vs Core Case forecasts)





6.6.7 Further information on the slower growth sensitivity test is provided in Annex 2 of the Forecast Data Book.

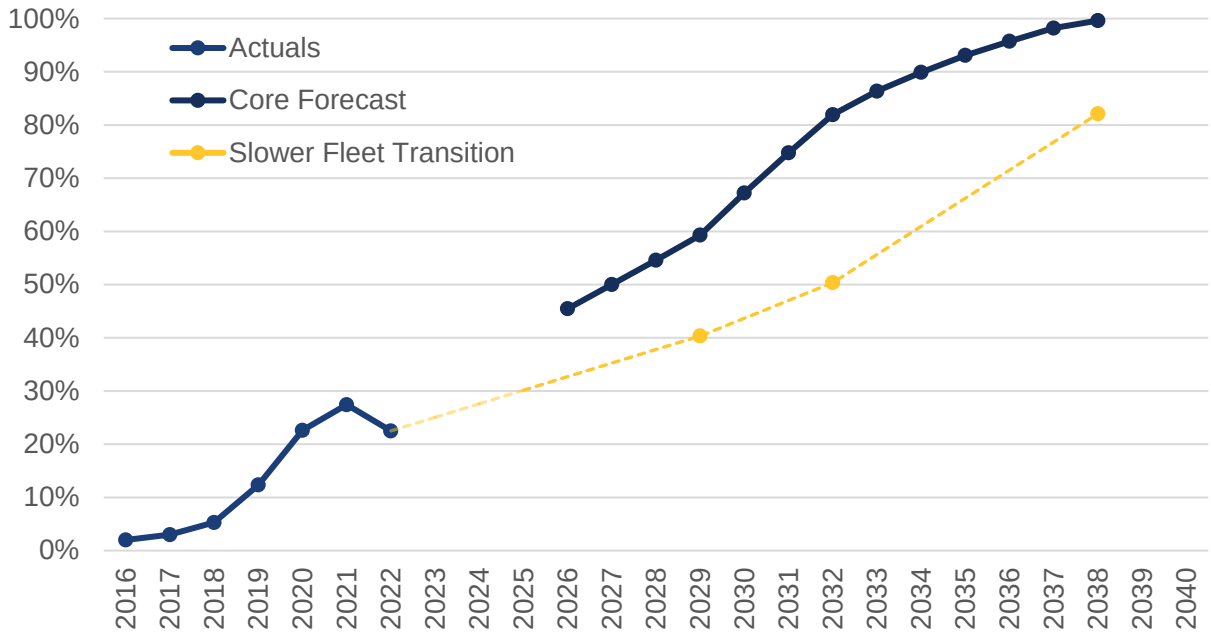
Slow Fleet Transition Sensitivity Case

6.6.8 Forecasts have been prepared for a 'Slower Fleet Transition' sensitivity case. This sensitivity assumes that the rate of transition of Gatwick's airline fleet takes longer to transition to next generation[49] aircraft. It has been used to understand how noise, air quality and carbon impacts could be greater if the turnover of aircraft types to next generation aircraft is slower than expected in the core forecasts.

6.6.9 In the Slow Fleet Transition cases the share of next generation aircraft increases more slowly throughout the forecast period than in the core forecasts. In the Slow Fleet Transition Baseline case the next generation share is assumed to reach 50% in 2032 compared to 80% in the core case, whilst by 2038 the next generation share of nearly 100% in the core forecasts is assumed to decline to 82% in the Slow Fleet Transition case. Further information on the assumed make-up of the aircraft fleet is provided in Annex 3 of **ES Appendix 4.3.1: Forecast Data Book** (Doc Ref. 5.3).

[49] Next generation used to reference types currently entering service (Airbus neos, Boeing MAX, Airbus A350s, Boeing 787s, etc.)

Figure 6.6-2 – Fleet Transition Assumptions, Core Forecasts and Slower Fleet Transition Sensitivity Test (% of next generation aircraft in air transport movement fleet mix)



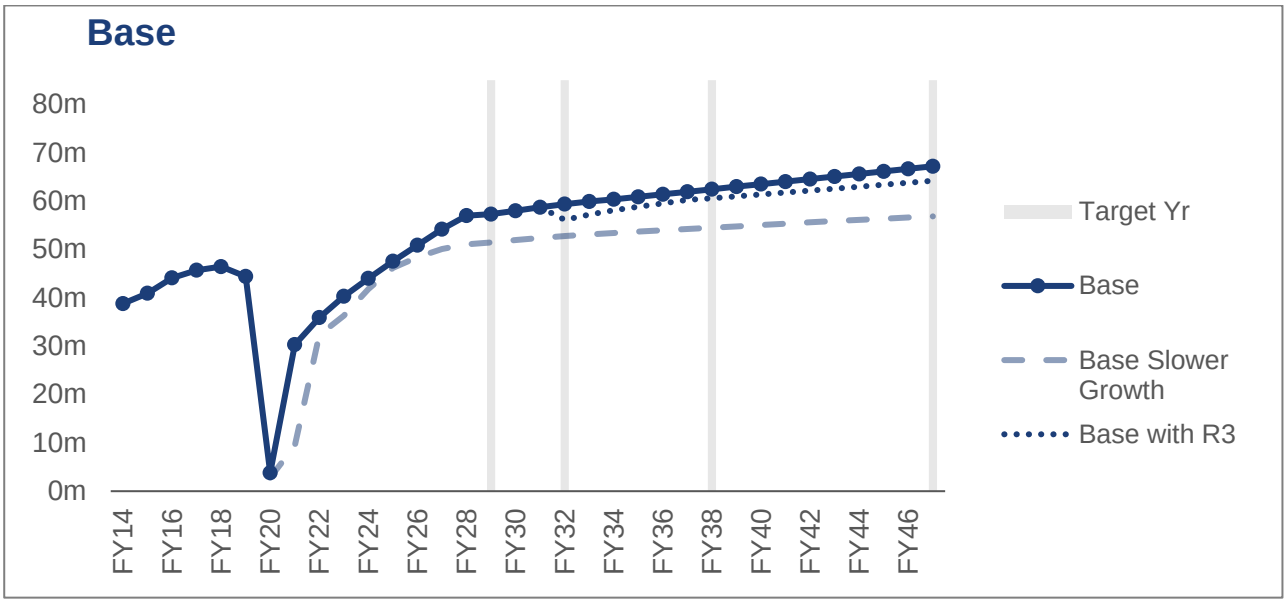
R3 Sensitivity Case

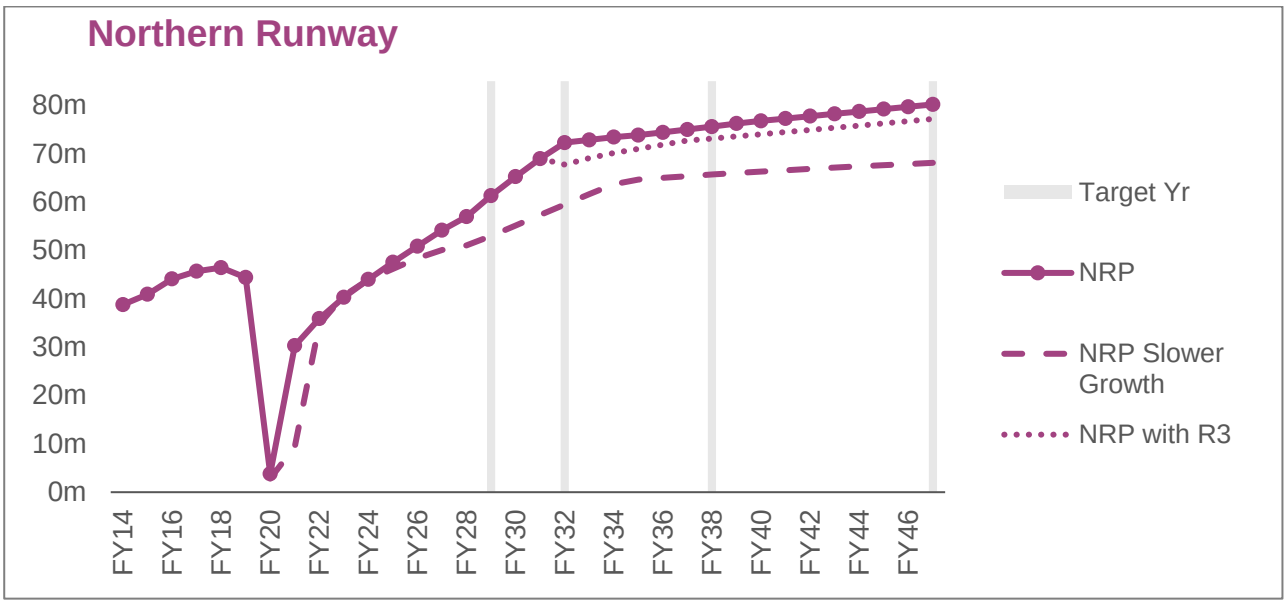
6.6.10 Forecasts have been prepared for a sensitivity considering the impact of Heathrow R3. For the purposes of this sensitivity test it has been assumed that R3 could open in 2032, which would result in slower passenger and ATM throughput at Gatwick from FY32 onwards, although any likely date is more likely to be in the mid-2030s. Whilst much uncertainty exists with regards to the principle, the timing, the rate that capacity is delivered, and the likelihood of Heathrow R3 being delivered, this case focuses on the potential impact on Gatwick's traffic.

6.6.11 Under the Heathrow R3 sensitivity test, Gatwick is assumed to lose traffic with long haul demand being the most significantly impacted reflecting Heathrow's leading position in this market segment today. Over time this loss in long haul traffic is assumed to be backfilled by short haul traffic which will continue to be dominated by LCCs.

6.6.12 Reflecting the smaller gauge of short haul traffic total passenger volumes are impacted more significantly compared to aircraft movements. Under the baseline forecasts 6% of passengers and 4% of ATMs are lost in 2032 whilst under the Northern Runway forecasts 6% of passengers and 5 % of ATMs are lost in the same period. In the long term the gap between scenarios narrows modestly to 4% by 2047 in both scenarios.

Figure 6.6-3 – Passenger Forecast Comparisons (Slower and LHR R3 Growth vs Core Case forecasts)





Luton Sensitivity Case

6.6.13 In addition to the impact of Heathrow R3 a sensitivity has been developed to consider the potential impact of development of London Luton Airport on Gatwick. In accordance with the Development Consent Order application submitted for development of Luton Airport, Luton's new terminal infrastructure is assumed to become operational in 2037 permitting growth to 32mppa some 8 years after Gatwick's Northern Runway is forecast to have been delivered.

6.6.14 Analysis of Gatwick and Luton's core catchment areas and their respective overlap as well as the overall demand and supply balance expected across the London airport system in the late 2030s was used to determine any potential impact.

6.6.15 It was found that relatively limited overlap exists between Gatwick and Luton, for example Luton has limited long haul connectivity and Gatwick's core catchment is relatively isolated from Luton's which has found to have a greater overlap with Stansted and Heathrow. In the late 2030s even with the provision of the Northern Runway demand is forecast to continue to exceed supply across the London market.

6.6.16 Given the limited overlap in catchment between Gatwick and Luton as well as London passenger demand continuing to exceed supply by the time Luton's DCO is delivered, any potential impacts from Luton on Gatwick were assumed to be marginal; therefore, overall passenger and ATM throughput was assumed to be in line with the core forecasts.

7 Resilience and Operational Performance Benefits

7.1. Introduction

7.1.1 Government policy is clear on the critical importance of ensuring sufficient capacity at airports in order to ensure resilience in airport operations. The ANPS, for example, is clear at paras 2.10 – 2.15 that a lack of capacity can have multiple negative impacts, all of which conflict with the objectives of national policy. Those negative impacts, which are recognised to arise from a lack of capacity, are identified in the ANPS to include:

- an adverse effect on the ability to travel conveniently;
- limits on the range of destinations served;
- negative impacts on the UK through risks of flight delays and unreliability;
- restrictions on the scope for competition and lower fares;
- declining domestic connectivity;
- erosion of the UK's hub status;
- constraining the scope of the aviation sector to deliver wider benefits;
- fares are likely to rise as demand outstrips supply; and
- the lack of available slots makes it difficult for new competitors to enter the market.

7.1.2 All of those factors are apparent at Gatwick, which relies on the use of the world's busiest daytime single runway and all of those factors would be addressed by the extra capacity proposed in the NRP.

7.1.3 Delays and inability to recover quickly from disruption have disproportionate effects on airlines, passengers and airport staff. A lack of capacity also impacts on the local community as planes run late or adopt holding patterns for longer.

7.1.4 The Northern Runway Project will offer a number of important resilience and operational benefits:

- increasing both Gatwick's resilience and, in turn, enhancing the resilience of the London Airports system.
- enhancing capacity to meet demand, allowing greater competition and enabling a more efficient distribution of take-off and landing slots, to the benefit of airlines and passengers.
- improving day to day operational performance – which will reduce delays and improve on time performance of aircraft operations.

7.2. Resilience

7.2.1 Resilience is the ability to anticipate, withstand and recover quickly from difficult day-to-day conditions, which includes variation to plan. Day-to-day variation at an airport can be aircraft presenting to the runway at times which differ from the scheduled time, aircraft taking longer than expected on the runway, and weather conditions which are less than favourable.

7.2.2 In addition to these day-to-day effects, a disruption event can occur, which is a larger scale impact which can be exacerbated by a lack of resilience, such as an aircraft breaking down on the runway, a key system going down or more extreme weather conditions like thunderstorms or low visibility. An airport which lacks sufficient capacity will struggle to deal with either day-to-day or more extreme events.

Gatwick Airport Resilience

7.2.3 The London airport system and Gatwick airport in particular, is operating close to its limits at many times of the year. With demand for slots exceeding supply, and forecasts showing that this is expected to increase in the future, there is little room for resilience in the current system.

7.2.4 The Northern Runway Project (NRP) offers the opportunity to increase the level of resilience both at Gatwick and the London system.

7.2.5 The NRP would bring multiple resilience benefits:

- overall runway capability increased from 55 movements per hour to 69 movements per hour;
- improved capacity and recovery for the critical first wave of daily operations and to recover from backlogs;
- increased capability of the Northern runway in the event of a disruption leading to closure of the main runway;
- reduced utilisation of the main runway, de-stressing the main runway operation;
- improved resilience offered by the proposed Charlie Box hold and reconfigured taxiways; and
- improving London Airports system resilience.

7.2.6 The following sections describe, in further detail, how each of these characteristics benefit resilience on both a day-to-day and disruption state basis.

Benefits to runway capability

7.2.7 The Project would increase Gatwick's declared runway capability from 55 to 69 movements per hour. Whist it is acknowledged that over time the demand will increase to fill the additional capability created, the increased capacity will generate the benefit of meeting demand and there will be inherent resilience benefits in having two operational runways, together with enhanced taxiway and holding capacity. The 'spare' capacity in the short to medium term will make it easier to accommodate typical variations that occur during the day, such as being able to more readily accommodate aircraft that are arriving or departing later than scheduled. This contrasts to the current situations where the full utilisation of the runway means it is difficult to accommodate delayed operations without impacting on other aircraft operations.

Improved capacity and recovery for the critical first wave of daily operations and to recover from backlogs

7.2.8 Gatwick's first wave of daily operations is created by the large number of narrow-body short-haul aircraft that are based at Gatwick (i.e. on the ground overnight), which are all scheduled to depart in a short period of time in the early morning period, typically from around 0600 to 0800. In busy parts of the year an airline will aim to schedule passenger flights on almost every aircraft they operate, from as early as possible in the day, with each aircraft spending as little time on the ground as possible to maximise the number of rotations (flights) the aircraft is able to undertake.

7.2.9 This means airlines cannot build much resilience into their schedules, and if a flight departs late in the first wave it will have a knock-on delay for other flights that the aircraft operates throughout the day – at Gatwick and at the destination airport. When first wave performance is poor (for example due to aircraft not being ready to depart at their scheduled times, or capacity being restricted by adverse weather), many flights end up off-schedule and this can create unplanned

peaks in demand for airspace and airports across the network. Managing these peaks in demand often requires delaying additional flights later in the day.

7.2.10 This is a common situation for many airports and airlines across Europe, with first wave departure capacity often over-subscribed for a period on busier days of the week. During Gatwick's summer peak, first wave departures are at capacity every day of the week, and after the first wave there is little spare capacity on the runway to accommodate any flights that were unable to depart on time without also impacting the arriving flights or other departing flights. With 55 movements per hour from a single runway scheduled throughout peak times, the risks of delay are even greater at Gatwick than elsewhere.

7.2.11 Whilst the first wave will continue to see the main and northern runways highly utilised due to the high demand for slots in this period, the Project will provide more spare capacity after the first wave. This spare capacity will offer increased resilience for recovery of first wave delays on a day-to-day basis, and in the event of any backlog forming at other times of day.

Increased capability of the Northern runway in the event of a disruption leading to closure of the main runway

7.2.12 The Northern Runway is currently used infrequently in the case of emergency events. One reason for this is because it takes at least 30 minutes to activate the switchover of operations from the main runway to the northern runway and there is a further 15 minute delay after ending use of the northern runway before operations can recommence on the main runway[50]. These necessary time penalties restrict the benefits of bringing into operation the northern runway for anticipated short duration emergencies and undermine the apparent benefit of having a second runway. In 2019 the northern runway was only used once in an unplanned 'emergency' event, and on that occasion for 2 hours. For this reason the northern runway is most commonly only used whilst planned essential repairs and maintenance work is carried out on the main runway.

7.2.13 The inherent capacity in the northern runway is largely unavailable and unused.

7.2.14 There are occasions where runway outages are unavoidable due to, for example, the need to undertake emergency patch repairs to the runway surface following the regular daily inspections, or to receive a flight that has declared an emergency, and which therefore may land and stop on the runway. Whilst closures of the main runway due to an emergency situation are rare, when a closure occurs it can cause major disruption to operations.

7.2.15 In contrast to emergency situations, most runway outages currently occur in response to the need to undertake planned maintenance activities on the main runway, which is planned to be carried out at off-peak times – normally late evening and at night – minimising and limiting disruption.

7.2.16 Unplanned runway outages are by definition unpredictable and can vary in duration. The table below splits out runway outages into two core scenarios – single runway outages and dual runway outages and for each considers how the Project would impact on resilience in the event of short (less than 1 hour) and long (more than 1 hour) disruption scenarios.

[50] The 30 minute delay in switching is based on the time it takes to clear aircraft from the Northern runway protected areas which include centrelines and taxiways. The 15 minute delay in switching back is due to changing systems and runway lighting

Table 7.2-1 Effect of Northern Runway Project on short and long duration disruption events

Runway Outage	Possible Causes	Duration	Resilience Comparison
Loss of one runway	Emergency landing e.g. due to a suspected fuel leak or hydraulic failure or fault identified to the runway surface that requires immediate repair.	Short (<1hr)	Currently, for anticipated short duration disruption events the time delays (described above) to activate the switchover of operations from the main to the northern runway and before recommencing operations on the main runway means that the northern runway offers limited benefit for short duration events. For these types of events the northern runway may not be used at all, meaning all Gatwick operations are suspended for the duration of the incident, leading to a backlog of operations. With the northern runway in operation both runways would already be in operation. Should either runway be closed for a short duration the other runway would remain operational, providing increased resilience with continuity of movements and an increase in the percentage of demand which can be processed.
		Long (>1hr)	Long outages are extremely rare but when they occur major disruption is inevitable. The Project would improve resilience in the event of a long closure of the main runway. In particular, dual runway operations and enhanced capacity of the northern runway and its taxiways together with the fact that it is already operational would offer significant new resilience. Whilst that benefit would reduce over time, the availability of two rather than one operational runway would always offer increased resilience. Any benefit of the enhanced northern runway would clearly be lost in the event of its closure but the effect of the Project proposals would mean that the stand, taxiway and hold capacity of the airport will have been significantly improved.
Loss of both Runways	Complete closure of both runways could occur due to severe weather i.e. airspace safety issue or ATC system failures.	Short (<1hr) or Long (>1hr)	In the event of either a short or long closure of both runways the Project would offer increased levels of resilience. Whilst in dual runway operations a larger backlog would build up, this backlog would be able to be cleared more quickly with both runways returned to operation due to the additional capacity. Speedier recovery would also be facilitated by the proposed Charlie Box holding area close to the runway which will enable optimal sequencing to aid speedier recovery and reduce airfield complexity (see below).

Increased capability of the Northern runway in the event of closure of the main runway due to separation between northern runway and Juliet Taxiway

7.2.17 Currently, when the northern runway is in use due to a temporary closure of the main runway the current main taxiway (Juliet taxiway) that runs immediately north of and parallel to the northern runway, which is used for arriving aircraft to taxi back to terminals, is positioned too close to the northern runway for use by widebody aircraft at the same time as other operations on the runway. This means operational throughput which could be offered on the northern runway is reduced following any widebody arrivals in westerly operations and before any widebody departures in easterly operations because departing and arriving aircraft would not be at a safe distance from the widebody aircraft on the taxiway for safe landing or take-off.

7.2.18 The changes proposed to the location and configuration of the Juliet Taxiway in relation to the proposed northern runway will mean that widebody arrivals are able to taxi to and from the runway independently of the northern runway, enabling much higher throughput on the northern runway in the event of disruption on the main runway.

7.2.19 The changes proposed to the configurations of northern runway entry, exit and departure holding areas have been designed to improve both the way aircraft in the queue waiting to depart can be sequenced and to reduce arrival runway occupancy in single runway operations. The configuration changes to the northern runway and surrounding infrastructure increase the capability of the northern runway from c.39 to c.52 movements in a balanced arrival/departure hour and, therefore, provide it with much greater capacity and resilience.

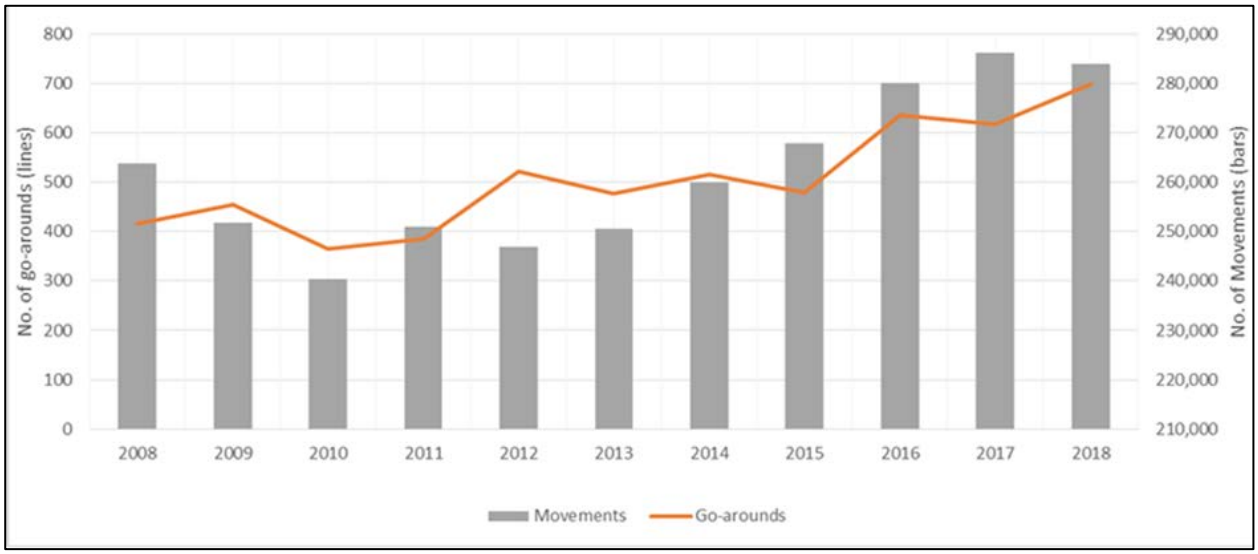
Reduced utilisation of the main runway, de-stressing the main runway operation

7.2.20 Under current single runway operations Gatwick's runway is highly utilised throughout the majority of the operational day, for large parts of the year. Under dual runway operations the intensity of use of the main runway will reduce from up to 55 movements per hour to typically up to 48. This results in a reduction in the time the main runway is considered occupied and, as a result, increases the buffer available between movements. The increased buffer is able to absorb variations in runway performance; hence a greater buffer between movements increases the airport's resilience.

7.2.21 The reduced intensity of use of the runway will reduce the risk of 'Go-arounds'. 'Go arounds' are a procedure that occurs when the captain of an arriving aircraft aborts landing during the final stages of approach. The procedure can be commenced by either the captain or air traffic control if either is not satisfied that the approach can be completed safely. One of the most common causes of go arounds occurs when a departing aircraft or preceding arriving aircraft has not fully vacated the runway ahead of the landing aircraft.

7.2.22 In the current single runway configuration the likelihood of 'go arounds' is heightened due to the very high intensity of use of the main runway, and the limited time between movements. As the airport has increased its movement numbers, the number of go-arounds has also increased as shown in the figure below.

Figure 7.2-1 – Number of 'Go-arounds' (2008 – 2018)



7.2.23 'Go arounds' lead to delays and disruption as a result of lost runway usage time during the 'go around' and then having to re-accommodate the aircraft that aborted landing back into the arrival flow. The reduced pressure on the main runway will significantly reduce the number of go arounds and enable any go arounds to be more easily accommodated back into the arrival flow.

Improved resilience offered by the proposed Charlie Box hold and reconfigured taxiways

7.2.24 Runway holds perform a critical function in lining up and resequencing departing aircraft. Examples of situations which can disrupt the sequence are aircraft with a technical issue, missed take off time or change to calculated take-off time or sudden changes to weather impacting local or remote airspace capacity and causing flights to be delayed. Greater hold capacity increases the ability to bring forward other aircraft.

7.2.25 The proposed Charlie Box hold will provide significantly increased aircraft runway holding capacity – for up to 16 departing aircraft – than the current Alpha Box hold. It is also designed to enable independent access to the runway for all held aircraft. This will offer far more effective arrangements to optimise sequencing than the current Alpha Box where resequencing is restricted to the front of each queue.

7.2.26 In addition, the holding area provides additional departure aircraft holding for aircraft delayed, for example, by changes to calculated take off time or minimum departure intervals (MDIs[51]). This enables the delayed aircraft to depart from pier served stands and taxi to the hold freeing up the stand for arriving aircraft and avoiding knock on delays.

Benefits to London Airports System Resilience

7.2.27 The Airports Commission recognised that by 2030 demand across the London airport system would be reaching the absolute limit of what could feasibly be accommodated. A lack of capacity and increasing risk of system failure was recognised to be damaging to the UK economy and to diminish London's status as a leading global city. The Interim Report of the Airports Commission

[51] Minimum departure intervals are a localised temporary measure requiring an increase in departure separation on selected routes. They are typically applied due to weather disrupting departure routes.

in 2015 left no doubt about the severity of the problem or the need for greater capacity in the London airport system:

"Across all scenarios considered, including where the UK is meeting its climate change targets, there is significant growth in demand for aviation between now and 2050, placing additional pressure on already stressed airport infrastructure in London and the South East. The London airport system is forecast to be under very substantial pressure in 2030, and by 2050 sees demand significantly in excess of the total available capacity, even when aviation emissions are constrained to 2005 levels."

"….problems are starting to emerge and are likely to get worse. Heathrow is effectively full. Gatwick is operating at more than 85% of its maximum capacity, and is completely full at peak times. Capacity constraints are making it more and more difficult for airports and airlines to operate efficiently, lay on new routes, and deal with resilience issues. More intensive runway use also makes it harder to offer appropriate and predictable respite from noise for people living and working near airports.

"The current approach of forcing ever greater volumes of traffic through the existing infrastructure, if continued, would also have increasingly detrimental effects on the national economy, businesses, and air passengers." (Executive Summary) [52]

7.2.28 Additional capacity at Gatwick allows for greater resilience across the London airport systems. Providing capacity to meet demand will bring economic and passenger benefits at the same time as reducing pressure in the system. In the event of a complete or partial closure of one of the other London airports, the NRP would provide greater capacity in the overall system enabling more flights to be diverted to Gatwick.

7.2.29 The additional capacity available, as a result of the NRP, as well as providing greater connections to new places will also add resilience to existing routes. This is because, in the event of flights being cancelled, the increased capacity offered by the Project will allow increased options and airline services for passengers to reach their intend locations.

Conclusion on Resilience

7.2.30 The London airport system and Gatwick airport in particular, is operating close to its limits at many times of the year and there is little room for resilience in the current system.

7.2.31 The Project offers a range of benefits that will improve the resilience of Gatwick and the London system. There are inherent resilience benefits in having two operational runways. Together with enhanced airfield infrastructure, resilience will be improved through reducing delays that occur in the event of adverse conditions or incidents, and by enabling speedier recovery following such events. The 'spare' capacity in the short to medium term will make it easier to accommodate typical variations that occur during the day, minimising and reducing disruption. This contrasts to the current situations where the full utilisation of the runway and existing airfield layout constraints make it both difficult to respond effectively to adverse events and challenging to recover from disruption.

[52] https://www.gov.uk/government/publications/airports-commission-interim-report

7.2.32 The benefits will extend beyond Gatwick to provide greater system wide resilience across the London airports, as well as providing greater connections to new places, providing more options for passengers to reach their intend locations in the event of disruptions.

7.3. Operational Performance

7.3.1 Consistently with bringing resilience benefits, the Northern Runway Project will offer important benefits to operational performance supporting achievement of on time performance.

7.3.2 The airport operation in its entirety is a complex 'ecosystem' consisting of many different operators and processes with a variety of factors, both controllable and uncontrollable, influencing the operational performance of the airport as a whole.[53]

7.3.3 Operational performance is considered by a passenger as the perceived level of service and it can be influenced by factors such as queuing and waiting times, delay compared to schedule, convenience, cost of service, comfort level and reliability of service amongst other things. Here the focus is on delay compared to schedule.

7.3.4 Typically, delay is measured based on whether an aircraft leaves its stand on time (within 15 minutes of its scheduled time), as this information is easily accessible. The main concern for a passenger, however, is actually whether or not they arrive at their destination on time.

7.3.5 There are many contributing factors involved in whether or not a passenger reaches their destination on time. Controllable factors include operational behaviours and targets, resourcing levels, physical infrastructure and airspace capacity. Uncontrollable factors can include weather conditions, disruption outside the UK (to European airports or air traffic control) or security alerts.

7.3.6 The Northern Runway Project will offer at least two important benefits which will support airlines in being able to improve on time performance and reduce delays:

i) reduced aircraft departure taxi-times and holding times at Gatwick; and

ii) capacity to enable more airline operators to obtain take-off and landing slots that achieve better on-time performance.

7.3.7 These are considered below.

Airfield Performance Benefits

7.3.8 The NRP will offer important benefits in respect of aircraft taxi and holding times, thereby helping to reduce delays, improve on time performance and achieve efficient operations for aircraft on the ground.

7.3.9 GAL has undertaken fast-time AirTOP simulation modelling of the airfield in dual runway operations. This has been used to inform both the layout and configuration of the proposed changes to the airfield which form part of the Northern Runway Project proposals and to test its capacity and performance, to ensure that the airfield can operate efficiently and effectively in processing departing and arriving aircraft. Simulation modelling has been undertaken for the

[53] Operating Resilience of the UK's aviation infrastructure and the consumer interest - CAP 1515 (CAA 2017)

years 2029 and 2038 under both westerly and easterly operations, for the busy day in August, when Gatwick would be operating close to its peak.

7.3.10 In addition, simulation modelling has also been undertaken of future baseline operational performance in 2029 and 2038 without the NRP. (At this stage the future baseline modelling has only been completed for westerly operations, which typically accounts for c. 80% of total movements in August).

7.3.11 A note on the Simulation modelling that has been undertaken is provided at Annex 8 of Appendix 4.3.1 of **ES Chapter 4 Existing Site and Operation** (Doc Ref. 5.1)

Operational Performance of NRP in Westerly Operations

7.3.12 The results of the AirTOP dual runway operations and baseline simulation modelling have been analysed to understand how the growth of traffic at the airport and the implementation of NRP will affect operational performance of the airfield both across the day (24hr period) and in the peak morning period 0600 – 1000 (Local Time).

7.3.13 The tables below compare the simulation and modelling results for departures taxi-time (which includes holding on taxiways and at the runway), arrivals taxi time and arrivals airborne holding for westerly operations in 2029 and 2038 for the baseline and dual runway operations. Improvements in taxi and holding times of greater than 1 minute are highlighted green, whilst marginal improvements and deteriorations in taxi and holding times of less than 1 minute are coloured amber. There are no increases in taxi or holding times of greater than 1 minute..

Table 7.3-1 – Modelled Taxi and Holding Times for Westerly Operations – 2029

	Baseline 2029		Dual Runway Operations 2029	
Category	**0600 – 1000 Local Time**	**Average (mean) 24hr**	**0600 – 1000 Local Time**	**Average (mean) 24hr**
Departures Taxi Time (mins)	20.3	17.1	**13.7**	**12.9**
Arrival Taxi Time (mins)	9.5	8.5	**9.8**	**9.0**
Arrival Airborne Holding Time (mins)	5.1	3.2	**3.2**	**3.0**

Table 7.3-2 – Modelled Taxi and Holding Times for Westerly Operations – 2038

	Baseline 2038		Dual Runway Operations 2038	
Category	**0600 – 1000 Local Time**	**Average (mean) 24hr**	**0600 – 1000 Local Time**	**Average (mean) 24hr**

Departures Taxi Time (mins)	20.4	17.1	**17.9**	**16.0**
Arrivals Taxi Time (mins)	10.0	8.7	**10.8**	**9.4**
Arrival Airborne Holding Time (mins)	6.3	3.4	**4.0**	**3.7**

Departures Taxi-times

7.3.14 In 2029 and 2038 average departure taxi times reduce in both the peak morning period and 24hr period compared to the future baseline.

Arrivals Taxi-times

7.3.15 In 2029 and 2038 average arrival taxi times increase very slightly in both the peak morning period and 24hr period compared to the future baseline.

7.3.16 The increases in arrival taxi times are slight but are caused by several factors:

- reduced exit speeds from the runway
- changes to the taxiway routing of arriving aircraft
- Increased number of departing aircraft pushing back onto taxiways

Airborne Holding

7.3.17 In 2029 average airborne holding time reduces in both the busy period and 24hr period. In 2038 airborne holding reduces in the busy period but increases slightly in the 24hr period.

7.3.18 It is important to note that airborne holding can be mitigated through air traffic management procedures such as slowing aircrafts on route. In addition, air traffic control has the ability to prioritise arrivals or departures so that airborne holding can be reduced but at the expense of increased delay to departures.

Operational Performance of NRP in Easterly Operations

7.3.19 Whilst AirTOP simulation modelling has been undertaken for easterly dual runway operations in 2029 and 2038, modelling has not been undertaken for the future baseline. It is therefore not possible to compare dual runway operational performance with future baseline operational performance for easterly operations. It is however possible to compare the simulated easterly dual runway operations in 2029 and 2038 with actual performance in peak summer 2018[54].

7.3.20 The following table compares the simulation results for easterly operations in 2029 and 2038 with 2018 for the busy day in August, when Gatwick was operating close to its peak. Improvements in taxi and holding times of greater than 1 minute are highlighted green, whilst marginal improvements and deteriorations in taxi and holding times of less than 1 minute are coloured amber. There are no increases in taxi or holding times of greater than 1 minute.

[54] The comparison is with Summer 2018 because the calibration of the AirTOP simulation model was based on observations made at Gatwick in Summer 2018 peak months.

Table 7.3-3 – Simulation results for Easterly Operations and for Peak Summer 2018, 2029 and 2038

Category	Measure	Peak Summer 2018	DRO 2029	DRO 2038
Departures Taxi Time (mins)	Average (mean) 24hr	20.68	17.70	20.11
Arrivals Taxi Time (mins)	Average (mean) 24hr	5.76	5.92	6.19
Airborne Holding (mins)	Average (mean) 24hr	5.09	3.87	5.43

Departures Taxi-times

7.3.21 In 2029 and 2038 average departures taxi times across the 24hr period are less than in 2018.

Arrivals Taxi-times

7.3.22 In 2029 and 2038 average arrival taxi times increase very slightly across the 24hr period.

Airborne Holding

7.3.23 In 2029 average airborne holding reduces compared to 2018. But in 2038 average airborne holding is higher than 2018.

7.3.24 As noted, earlier airborne holding can be mitigated through air traffic management procedures.

Conclusions on Airfield Performance

7.3.25 In both westerly and easterly operations average departures, and notwithstanding the growth in flights, taxi times will reduce with the new NRP infrastructure compared to the future baseline (westerly operation) and compared to 2018 actual performance (easterly operations). These improvements are significant in 2029. The benefits diminish over the period to 2038 as operations on northern runway increase and the airport is successful in accommodating substantial growth.

7.3.26 Arrivals taxi times increase compared to the future baseline in 2029 and 2038 (westerly operations) and compared to 2018 actual performance (easterly operations) but in both cases the differences are marginal.

7.3.27 Airbourne holding time reduces in 2029 but, as the northern runway operations increase, the reductions decline and the modelling shows increases in 2038. Airborne holding can be mitigated through air traffic management procedures.

7.3.28 Overall, the simulations demonstrate that there are significant taxi time benefits when operating in westerly direction – the main operation mode during peak months. These benefits occur every day in typical conditions whilst, when disruption occurs, the resilience benefits of the Project would bring additional benefits, including the ability to more quickly recover from any delay.

7.3.29 The simulation results demonstrate the proposed airfield configuration is capable not only of accommodating substantial additional demand but that the enhanced airport would perform better for departures in 2029 and 2038 than it would if the Project was not implemented. Whilst, as

would be expected, as dual runway operations increase some of the benefits reduce, the Project would continue to offer reductions in departures taxi times out to 2038.

7.3.30 The fact that the benefits may reduce over time reflects the reality that demand exceeds available supply and that there will need to be continuing investment in capacity enhancements in the London system.

Planned Block Times and increased Slot Availability

7.3.31 As has been explained in Chapter 5, Gatwick is classed as a 'Level 3 airport' in accordance with the Worldwide Airport Slot Guidelines due to the demand for airport infrastructure significantly exceeding the airport's capacity.[55] The Level 3 designation results in an independent coordinator (ACL) being appointed to allocate and manage the demand for slots within the declared airport capacity limits, from airlines and other aircraft operators intending to use the airport.

7.3.32 Chapter 5 included the table below, showing the overall upward trend in demand for slots and a consistent demonstration of demand for slots exceeding available capacity in the period prior to and unaffected by the COVID pandemic.

7.3.33 The table not only reports the number of slots that were not able to be met, but also reports slots that were allocated but not at the times requested – referred to as '*Allocated but not OK'*.

Table 7.3-4 – Initial coordination report by ACL for six Summer seasons (2015 – 2020)

	Summer 2015	Summer 2016	Summer 2017	Summer 2018	Summer 2019	Summer 2020
Total Demand	197,639	217,941	211,099	232,306	218,920	233,601
Total slots allocated	182,755 (92.5%)	192,785 (88.5%)	195,234 (92.5%)	199,667 (85.9%)	194,135 (88.7%)	199,850 (85.6%)
Demand for slots not able to be met	14,884 (7.5%)	25,156 (11.5%)	15,865 (7.5%	32,639 (14.1%)	24,785 (11.3%)	33,751 (14.4%)
Number of slots allocated and cleared 'OK'	151,568 (77%)	160,252 (74%)	168,442 (86.3%)	172,775 (86.5%)	174,633 (90%)	173,235 (86.7%)
Allocated but not 'OK' (Selected reasons shown below)	31,187 ((17%)	32,533 (16.9%)	26,792 (13.7%)	26,892 (13.5%)	19,502 (10%)	26,615 (13.3%)
Runway constrained slot	*29,503*	*30,902*	*26,272*	*22,793*	*19,084*	*25,467*
ARR/DEP Turn feasibility	*470*	*629*	*233*	*744*	*233*	*797*
Terminal constrained	*300*	*143*	*106*	*3,355*	*95*	*141*

7.3.34 For example, in the Summer 2020 declaration process, the initial coordination report reported that 199,850 slots (85.6% of the total demand for 233,601 slots) were successful in their application and 33,751 (14.4%) were unsuccessful in the initial slot allocation process. Furthermore, 26,615 of the allocated slots were '*Allocated but not OK'*, meaning that they were allocated but not at the times requested.

[55] Worldwide Airport Slot Guidelines © 2022 Airports Council International, International Air Transport Association, Worldwide Airport Coordinators Group All rights reserved.

7.3.35 The risk with allocating a slot not at the requested time, is that they may not match with the slots that the airline has at the other end of the journey, posing a risk to efficient and on-time performance, or making the slot not a feasible solution for the airline resulting in slots being returned to the slot pool. For example, an airline may request an arrival slot at 12:30pm, but due to constraints on slot availability, it is allocated a slot at 11:55am. This may not align with the block time[56] required from the origin airport, in which case the airline can choose to accept or hand back the slots allocated. If the slot is accepted, The airline could try and adjust the timing at the origin or destination or, as a worst case, operate trying to achieve a block time which is 35 minutes less than the target block time, risking the airline's ability to arrive on time at its destination.

7.3.36 The increase in runway slot capacity created through the NRP will offer improved prospects for airlines to receive slot times, as well as adjust their slot times if required, to fit with their slots at the other end of their journey and turn-around time required on the ground at Gatwick. Currently the low slot availability doesn't allow for flexibility on adjusting slot times. This extra capacity will give airlines the opportunity to plan their schedules to improve on time performance rather than planning based on historic and limited slot availability, which can compromise on time performance.

7.3.37 The importance of ensuring a sufficient supply of slots to meet demand and enable efficient operations is directly recognised by government in *Flightpath to the Future*, which sets out that:

"…it is critical that the existing capacity of airports is managed as efficiently as possible. Airport slots are used to manage capacity at eight of the busiest airports in the UK. The airport slot allocation system is key to the successful functioning of these airports, as well as the efficiency and competitiveness of the aviation sector as a whole. The current slot allocation system was devised in the early 1990s, at a point at which demand was growing quickly and the amount of available capacity at certain airports was being rapidly filled. Some airports are now effectively full, and therefore newly available slots at some slot-coordinated airports have become a rarity, creating a barrier to competition and new entrants to the market." (page 26)

7.3.38 As has been noted in Chapter 5, slot scarcity also creates a market in slots, which can escalate at the very busiest airports to the trading of slots for substantial premiums. Over the period 2012 to 2019 the value of slot pairs traded at Gatwick have more than tripled from £0.8million to close to £3m per slot pair.

7.3.39 Slot premiums are generally passed on to passengers through increased fares, contrary to government objectives.

7.3.40 It should be noted that this barrier to competition can only be addressed by the release of new capacity. The release of a large number of new slots made possible by the Northern Runway Project, particularly when the northern runway first becomes operational and in the years following, would offer airlines greater prospects of slots being available at the times needed to ensure efficient operations. Airlines currently holding slots at less than ideal times will have the opportunity to move them to better times and would then have rights to retain them for future

[56] The total amount of time a flight takes — from pushing back from the departure gate ("off-blocks"), to arriving at the destination gate ("on-blocks").

seasons. The additional capacity will offer lasting benefits to achieving on time performance for flights to and from Gatwick.

7.3.41 As the Worldwide Airport Slot Guidelines explains, coordination is no substitute for capacity:

'*Coordination is not a solution to the fundamental problem of a lack of airport capacity. In all instances, coordination should be seen as an interim solution to manage congested infrastructure until the longer-term solution of expanding airport capacity is implemented*.'

7.3.42 The NRP will, however, address the capacity constraints and thus enable more effective and efficient coordination.

Conclusions on Operational Performance

7.3.43 The Northern Runway Project will offer substantial and important benefits to the airport's operational performance to the benefit of airlines, passengers and the markets they serve. The nature of those benefits is directly consistent with the up to date objectives set by government for the UK's aviation sector.

7.3.44 At the same time as meeting significant demand, new airfield infrastructure planned to be introduced as part of the Northern Runway project will enable more resilient and efficient operations, reducing average aircraft departure taxi-times at peak times and across the day and contributing significantly to the enhanced operation of the airport.

8 Economic Benefits

8.1. Introduction

8.1.1 As is recognised in the policies summarised in Chapter 3 of this report, the expansion of airports delivers significant economic benefits, both locally and nationally. Gatwick Airport already provides jobs for thousands of local residents both directly on the airport, through the supply chains that serve it, and at the businesses that use it to connect with customers and suppliers around the world.

8.1.2 The NRP will enable the airport to enhance that economic role, providing more jobs, more economic activity and enhancing international connectivity and trade.

8.1.3 This Chapter of the report summarises the economic benefits of the proposed scheme. It focuses on jobs and Gross Value Added (GVA). GVA is the sub-national contribution to national Gross Domestic Product (GDP), a measure of the size of the economy.

8.1.4 It draws on a number of reports that form part of this application and estimates the impacts at a number of spatial scales. These are explained in Chapter 8.2. Chapter 8.3 defines the various economic terms used throughout the report and Chapter 8.4 sets out the economic impact of Gatwick Airport in 2019. Chapters 8.5 to 8.10 then set out the estimates of a range of economic impacts during construction and operation.

8.2. Background and Study Areas

8.2.1 To support this planning application Gatwick Airport Limited (GAL) has produced analysis of the local and national economic benefits of the scheme from Lichfields, Oxera and Oxford Economics, as well as updated previous assessments.

8.2.2 The local socio-economic impacts are set out in **ES Chapter 17: Socio-Economic** (Doc Ref. 5.1) (produced by Lichfields) which includes **ES Appendix 17.9.2: Local Economic Impact Assessment** (produced by Oxera). The national impacts are set out in **Needs Case Appendix 1 – National Economic Impact Assessment** (Doc Ref 7.2) by Oxera.

8.2.3 In addition, GAL has commissioned an update of its 2017 report by Oxford Economics, Document 7.2 Needs Case Appendix 1 “The Economic Impact of Gatwick Airport: a report by Oxford Economics”. This sets out both local and national economic impacts arising from the project.

8.2.4 The impacts in these documents are presented at different spatial scales.

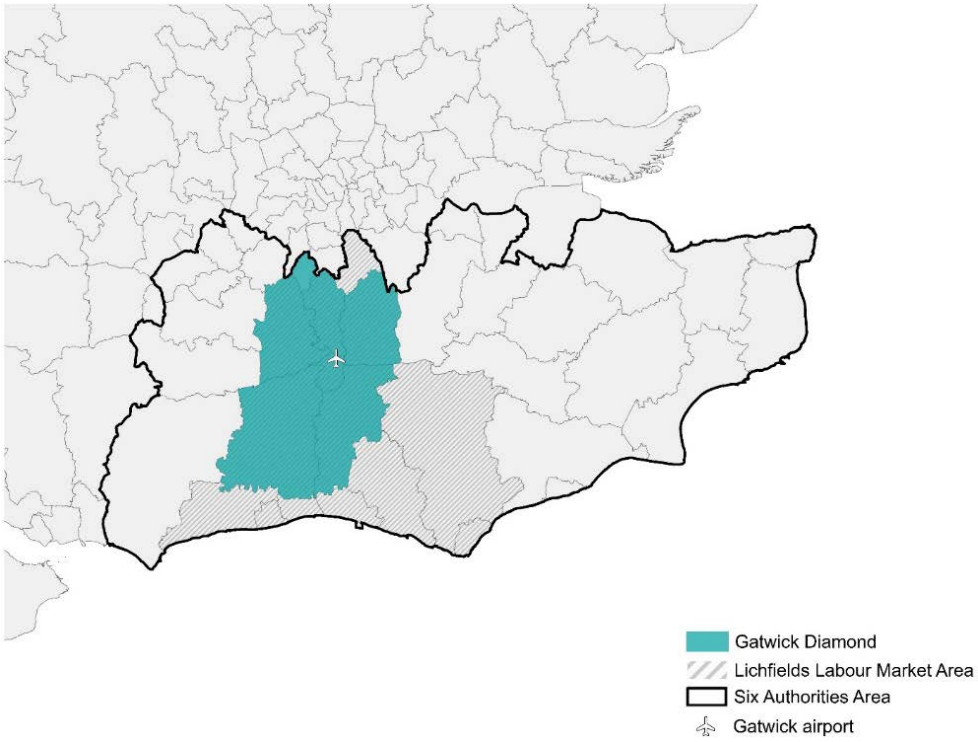
- **Gatwick Diamond** consists of seven local authority areas: Crawley; Epsom & Ewell; Horsham; Mid Sussex; Mole Valley; Reigate & Banstead; and Tandridge
- **Labour Market Area** (‘LMA’, **Environmental Statement Figure 17.4.2**) (**Socio Economic Effects Figures** (Doc Ref. 5.2): This is defined based on the application of the 75% commuting threshold used by the ONS for defining Travel-to-Work Areas (TTWAs) (ONS, 2016), using local authority boundaries. This boundary has been defined using ONS 2011 Census Origin and Destination commuting data and Gatwick Airport’s in-house passholder database (pre pandemic data). The LMA represents the wider extent of where the economic and labour market effects of the Project may impact upon receptors, as this is the area from which Gatwick Airport currently draws the majority of its operational workforce and can be

expected to do in the future. The LMA includes the following local authority areas: Crawley, Mole Valley, Reigate and Banstead, Croydon, Tandridge, Wealden, Lewes, Brighton and Hove, Mid Sussex, Horsham, Eastbourne, Adur, Worthing and Arun. Some parts of the LMA also fall within the South Downs National Park Authority.

- **Six Authorities Area** (Environmental Statement Figure 17.4.2) (**Socio Economic Effects Figures** (Doc Ref. 5.2)): This area reflects where the widest socio-economic effects of the Project could impact on receptors. The area aligns with the 'six authorities area' contained in the **ES Appendix 17.9.2: Local Economic Impact Assessment** (Doc Ref. 5.3) This study area comprises the County Council areas of East Sussex, West Sussex, Surrey, Kent and Brighton & Hove (unitary authority) and the London Borough of Croydon.

8.2.5 These are shown in Figure 8.2-1 with the Gatwick Diamond area in green. That forms part of the larger Labour Market Area (hatched) and the Six Authorities (bold).

Figure 8.2-1 – Geographic Study Areas



8.3. Definitions of Economic Impact

8.3.1 As shown in Figure 6-4.1, the NRP is forecast to add around 13 million passengers per annum (mppa) from 2032 onwards. In 2032 passenger numbers reach 72mppa with the NRP (vs 59mppa without) and this then increases to 80mppa in 2047 (vs 67mppa).

8.3.2 Similarly, the number of air traffic movements (ATMs) is forecast to increase. In 2032, with the NRP, there are forecast to be 378,000 ATMs (vs 313,000 without) and this rises to 386,000 in 2047 (vs 326,000 without).

8.3.3 This will lead to different types of economic impacts. The increase in passengers and flights will lead to more jobs providing those flights and the associated services at the airport and through its supply chains.

8.3.4 It will also facilitate the growth of a range of businesses who use the flights – either for passengers or freight - who benefit from the increased connectivity and access to markets offered by more flights. This will boost inbound tourism and trade and help attract inward investment and can also have labour market and agglomeration benefits.

8.3.5 The economic benefits from construction are only estimated on a direct basis – i.e. the employment that will be created onsite constructing the NRP. The economic benefits of the operational phase are split into three types of jobs associated with the airport itself (direct, indirect, induced) and then the connectivity benefits which are called "catalytic" as well as tourism, trade, labour market, agglomeration, and inward investment benefits. As set out below, some of these are only assessed qualitatively.

8.3.6 The national assessment by Oxera also includes an estimate of economic welfare benefits which has been derived in line with the HM Treasury Green Book. Whilst this is not necessary for a private sector proposal such as the NRP, and these effects cannot be combined with the employment and GVA estimates, the assessment provides further evidence of the positive economic benefits from the scheme.

Table 8.3-1- Types of Economic Impact

Type of impact	Impact	Analysis
Construction	Direct	Employment created onsite from constructing the NRP.
Operational Impacts	Direct	Economic activity of firms on site at the airport. Examples include air crews or airport management staff.
	Indirect	Economic activity in the supply chain of Gatwick and other firms located at the airport, such as aircraft parts manufacturers or maintenance firms. These firms in the supply chain are not based at the airport. The estimated indirect impacts are restricted to those occurring within the UK.
	Induced	Economic activity due to workers—both on site and in the supply chain—spending their wages on activities that are not necessarily associated with, or located close to, the airport, such as barbers and restaurants.
	Catalytic	Economic activity of firms that are not in the indirect or induced footprint of the airport choosing to locate or expand near the airport because of the connectivity that it offers. An example might be a professional services firm opening a new office near Gatwick Airport or a

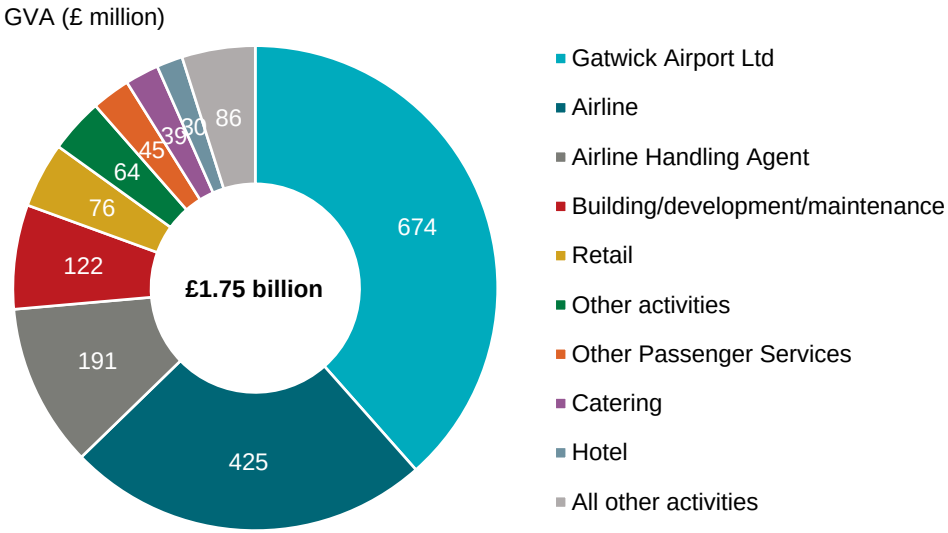
		manufacturing company expanding in the area as a result of the connectivity that the airport offers.
Wider Economic Impacts	Freight	Increase in import/export volumes and associated economic activity as a result of increased ATMs
	Inbound Tourism	Increased inbound passengers from overseas means more tourists spending money in the UK and creating jobs and GVA.
	Changes in imperfectly competitive markets	Additional economic value of output not captured through user benefits because fare savings are not fully passed on to consumers when markets are not perfectly competitive.
	Government Revenues	The additional air passenger duty (APD) that the Government will collect as a result of more outbound passengers.
	Employment Effects	The increase in jobs and GVA is likely to mean workers (on average) move to more productive jobs.
	Productivity Effects	The NRP is expected to increase economic activity at the airport and in its vicinity. This is likely to lead to a higher concentration of activity and spillover or agglomeration effects as businesses become more productive
	Trade and Foreign Direct Investment	Increased/improved connectivity means the area around Gatwick and the UK as a whole become more attractive as a place to do business. This leads to more trade and investment which in turn means more jobs and GVA. However, these are largely captured in the assessment of catalytic effects, but also form part of the wider economic impacts

8.4. Baseline Economic Impact (2019)

8.4.1 Gatwick airport already makes a major contribution to the local and national economies. The Oxford Economics report, The Economic Impact of Gatwick Airport sets out an estimate of the contribution that the airport made to the local and national economy in 2019 (the last year of full operation prior to Covid).

8.4.2 GAL itself contributed nearly £675m to the economy and the airport as a whole contributed £1.75bn. Figure 8-4.1 shows how that was split between different types of direct airport activity.

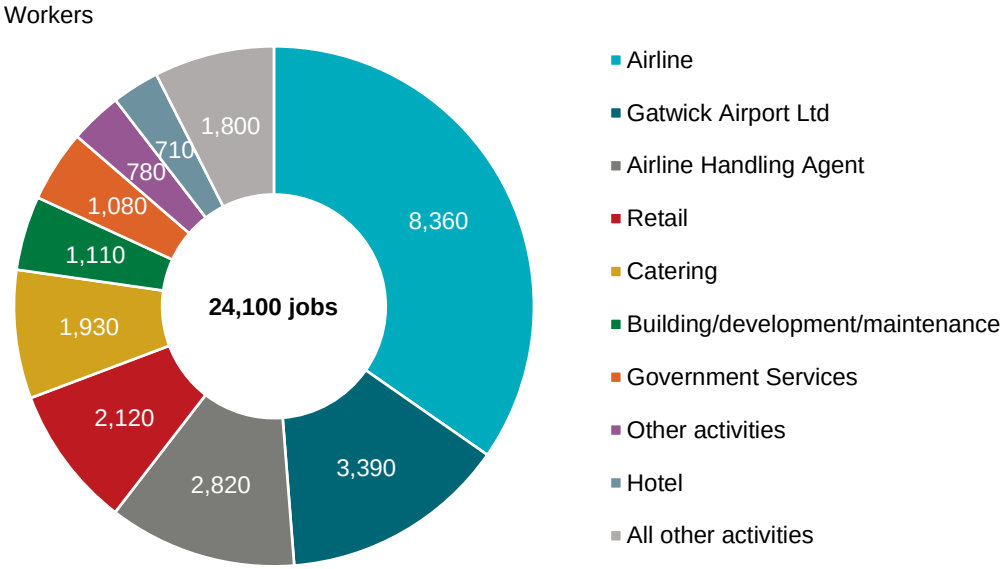
Figure 8.4-1 – Direct GVA by type of activity, Gatwick Airport, 2019



Source: GAL, Oxford Economics. Note: may not sum due to rounding.

8.4.3 Employment on the Gatwick Airport site totalled around 24,100 workers on a headcount basis during 2019.[57] Of these, by far the largest share was made up of airline employees, encompassing both ground-based staff as well as cabin crew, pilots, and engineers. GAL's share of employment is much lower than its share of the Airport's GVA contribution, reflecting the very capital intensive (and hence highly productive) nature of airport operations. Most of the employment comes from non-GAL activities; the full breakdown of employment by business type is set out in Figure 8-4.2.

Figure 8.4-2 – Direct employment by type of activity, Gatwick Airport, 2019



Source: GAL, Oxford Economics. Note: may not sum due to rounding.

[57] Headcount basis means that all full- and part-time employees (and contractors) are counted as the employment of one person.

8.4.4 This level of economic output at Gatwick Airport supported a large direct tax contribution. Considerable sums of labour taxes, in the form of income tax and National Insurance Contributions (NICs), are collected as a result of the tens of thousands of workers on the campus.[58] Moreover, the businesses trading at the Airport pay Corporation Tax on their profits, National Non-Domestic Rates (business rates) on their premises, and certain product taxes such as fuel duties, import taxes, Air Passenger Duty, Aggregates Levy, and others.[59]

8.4.5 The activities on the Gatwick campus directly generated £1.08 billion in taxes for the UK's public finances in 2019. The largest share of this contribution is an estimated £680 million raised through Air Passenger Duty (APD). In addition to APD, the Gatwick campus generated £228 million in labour taxes, around £50 million in corporation taxes, and a further £122 million in other taxes on products and production.

8.5. Construction Impacts

8.5.1 The construction workforce is expected to peak at 1,350 workers.

8.5.2 **ES Appendix 17.9.1: Gatwick Construction Workforce Distribution Technical Note** (Doc Ref. 5.3) sets out the extent to which GAL expects to be able to draw its contractors (and therefore the workforce) from within the local area. In its primary scenario it expects around 20% of the workforce to be non-local (i.e. to require temporary accommodation in the area) because they, or their employer, has skills/services that are not available locally. That leaves around 80% of the workforce being from London and the South-East.

8.5.3 The following table shows how at the peak of construction workers are estimated to be drawn from the neighbouring local authorities.

Table 8.5-2 – Construction Workforce by Local Authority

Local Authority	Construction Workers
Reigate and Banstead	135
Crawley	135
Mid Sussex	45
Croydon	40
Mole Valley	35
Tandridge	30
Sutton	30
Bromley	30
Horsham	30
Merton	20
Total (may not sum due to rounding)	**530**

[58] Labour taxes are estimated using HMRC tax rates, and the distribution of salaries reported in Gatwick's Employer Survey 2016.
[59] These are quantified by applying average 'effective' tax rates experienced by businesses, to the estimated level of output they generate at the Gatwick site. These rates are applied on an industrial basis, disaggregated by 28 broad industry types at Gatwick Airport.

8.5.4 At the peak of the construction workforce, around 630 workers will come from the wider Six Authority area which includes most of the authorities in Table 8-5.1.

8.6. Direct, Indirect and Induced Impacts

Introduction

8.6.1 Both Oxera and Oxford Economics have produced estimates of the Direct, Indirect and Induced (DII) impacts. In both cases, these are estimated on a gross basis, i.e. they do not take account of losses of economic activity elsewhere due to passengers switching form one airport to another or because of crowding out of other economic activity.

8.6.2 In practice, such effects are very small at the local level, but become slightly more significant at the Six Authority level (e.g. in Surrey where activity might move from Heathrow to Gatwick). However, given the capacity constraints in the London aviation market, the level of displacement, even at the Six Authority level would be very low.

8.6.3 This Chapter reports the impacts estimated by Oxera. These are lower than the Oxford Economics estimates (and therefore more conservative) and are the ones used in the Socio-Economic chapter of the Environmental Statement.

Direct Impacts

8.6.4 Table 8.6-1 below shows the additional direct GVA and employment that the Project will generate in each future assessment year. It is estimated that, as a result of the Project, in 2029 employment at Gatwick will increase by 1,000 jobs and GVA will increase by £73m. This will further increase to 3,200 jobs and £263m in GVA by 2038, and 3,100 jobs and £286m in GVA by 2047.[60] These values reflect Gatwick Airport's high productivity, part of which could be attributed to the capital-intensive nature of activity at a major airport.

[60] The GVA impact increases between 2038 and 2047, while the job footprint decreases due to increasing productivity per worker between the two assessment years.

Table 8.6-1 – Direct Economic Impacts

	2029	2032	2038	2047
Direct GVA	**£73m**	**£238m**	**£263m**	**£286m**
Direct employment	**1,000**	**3,100**	**3,200**	**3,100**

Note: Entries correspond to the incremental difference between the direct economic footprint of Gatwick with and without the Project. GVA is reported in 2022 prices. Employment figures are expressed as headcounts.

Source: GAL, ICF; Oxera analysis.

8.6.5 While all direct impacts occur on site at the airport, direct employment figures are also disaggregated at a LAD level based on where airport employees live. This is summarised for the different spatial scales in Table 8.6-2.

Table 8.6-2 – Distribution of Direct Employment

	2029	2032	2038	2047
Gatwick Diamond	520	1,670	1,695	1,630
Labour Market Area	690	2,220	2,250	2,170
Six Authorities Area	765	2,460	2,495	2,405
National	**1,000**	3,100	3,200	3,100

NB Figures may not sum due to rounding and table columns do not sum

Indirect Impacts

8.6.6 The **indirect impacts** refer to the employment and GVA supported across the UK as a result of the supply chains of GAL and other firms located at Gatwick Airport. It uses an input-output model to estimate the increase in economic output (measured by GVA) and then converts that into indirect job estimates using the South East GVA per job based on ONS data. The full methodology is set out in **ES Appendix 17.9.2 Local Economic Impact Assessment** (Doc Ref. 5.3).

8.6.7 Unlike the direct jobs and GVA (which are on site at Gatwick Airport), the indirect footprint will be distributed across a wider geographic area. Oxera has estimated how it would be spatially distributed based on the Oxford Economics 2017 study, 'The Economic impact of Gatwick Airport' and on ONS estimates of GVA for each local authority in the UK.

8.6.8 Table 8.6-3 shows the estimated increase in the indirect impacts of Gatwick Airport as a result of the Project. Estimates for each study area in the table include significant overlaps between regions—e.g. the Six Authorities estimate includes the indirect footprint in the Labour Market Area. Therefore, these figures should not be considered additive, but they are presented in order to show the relative magnitude of the impact in each area.

Table 8.6-3 – Indirect Economic Impacts

	2029	2032	2038	2047
Indirect GVA				
Total UK	**£58m**	**£191m**	**£212m**	**£230m**
of which Six Authorities	£43m	£141m	£156m	£170m
of which Labour Market area	£21m	£70m	£77m	£84m
of which Gatwick Diamond	£14m	£46m	£51m	£55m
Indirect employment				
Total UK	**900**	**2,700**	**2,800**	**2,700**
of which Six Authorities	600	2,000	2,100	2,000
of which Labour Market area	300	1,000	1,000	1,000
of which Gatwick Diamond	200	700	700	700

8.6.9 These are lower than those reported in the Preliminary Environmental Information Report because of a change in methodology by Oxera. The estimates above imply a direct-to-indirect impact multiplier of 1.88.

Induced Impacts

8.6.10 The **induced footprint** refers to the employment and GVA generated as a result of individuals working at Gatwick or in its supply chain spending their wages. More specifically, it represents the additional income generated as a result of the direct and indirect impacts discussed above. This is then distributed across the region based on the known home locations of existing workers at the airport. The full methodology for how this is done is set out in **ES Appendix 17.9.2 Local Economic Impact Assessment** (Doc Ref. 5.3)

Table 8.6-4 – Induced Economic Impacts

	2029	2032	2038	2047
Induced GVA				
Total UK	**£73m**	**£238m**	**£263m**	**£286m**
of which Six Authorities	£27m	£88m	£98m	£106m
of which Labour Market area	£24m	£80m	£88m	£96m
of which Gatwick Diamond	£18m	£60m	£66m	£72m
Induced employment				
Total UK	**1,100**	**3,400**	**3,500**	**3,400**
of which Six Authorities	400	1,300	1,300	1,300
of which Labour Market area	400	1,100	1,200	1,100
of which Gatwick Diamond	300	900	900	800

8.6.11 Again, these are lower than those reported in the Preliminary Environmental Information Report because of a change in methodology by Oxera.

8.7. Maximising Benefits

8.7.1 In order to maximise the employment and supply chain benefits from the NRP, GAL has drafted ES Appendix 17.8.1: Employment, Skills and Business Strategy (Doc Ref.5.3) . This will be secured through the S106 and brought forward by GAL in partnership with local stakeholders and building on existing relationships. It includes measures to open up routes into work experience and careers at the airport, including through outreach, training and job brokerage.

8.7.2 It is structured around six themes which are summarised in Table 8.6-5. Some of the themes are focused on the labour market and others on businesses in the local area.

Table 8.6-5 ESBS Themes

Theme	Activity
Inspire and motivate	• Harness the excitement and motivational potential of the Project to inspire the current and next generation of talent to confidently invest their careers and futures at Gatwick Airport and with other employers within the Local Study Area and Labour Market Area • Challenge perceptions of STEM careers to encourage new and different talent pools to pursue careers in STEM, particularly groups that are underrepresented in STEM careers • Ensure that young people develop the knowledge, behaviours, and skills required to enable them to successfully access jobs and careers that match their aspirations and capabilities
Construction	• Employment and Skills: o Create clear pathways to construction employment, skills development and other employment and skills related opportunities for residents of the Local Study Area as a priority, then residents of the Labour Market Area; o Ensure that these pathways are in place sufficiently in advance of recruitment to maximise opportunities for take up by residents. • Business o Lever the procurement process to facilitate access by SMEs from the Local Study Area and Labour Market Area to gain contracting opportunities and achieve sustainability benefits.
Employment and Skills (non-construction)	• Create clear pathways to Gatwick employment, skills development and other employment and skills related opportunities arising from the operational phases of the Project for residents of the Local Study Area as a priority, then residents of the Labour Market Area; • Ensure that these pathways are in place sufficiently in advance of commencement of recruitment to maximise opportunities for take up of these opportunities by residents.

	• Create opportunities to target Gatwick employment and skills related opportunities arising from business-as-usual operations, from the time of DCO approval, for residents of the Local Study Area as a priority, then residents of the Labour Market Area.
Adding Value through Procurement	• Employment and Skills o Lever the procurement process to support local recruitment and enhance workforce development. • Business o Create the conditions for GAL to increase the sustainability of local businesses and add maximum value to local economy.
Innovation	• Maximise the full potential of the Project to drive up entrepreneurship, business productivity and the development of cutting-edge technology
Regional Promotion	• Employment and Skills o Create the conditions for driving up high level skilled jobs within the Labour Market Area • Business o Showcase and actively promote the economic benefits of the Gatwick region to generate foreign direct investment and expansion of existing businesses and drive up the value of the visitor economy.

8.7.3 Together these measures will help ensure local residents and businesses have the greatest chance of capitalising on the benefits of the NRP. In addition, through the relationships that are created with the supply chain, there will be better links into vacancies that arise as part of Gatwick's "business as usual."

8.8. Catalytic Impacts

8.8.1 As set out above, Gatwick's operations make a significant economic contribution to its local and sub-regional area. However, its impact economic impacts extend far beyond this – both geographically and through the wider economy. The catalytic impacts of Gatwick Airport come from the wider benefits that the government, consumers, employees, and other industries gain from the services the airport provides.

8.8.2 The NRP will provide increased flights that provide vital links connecting UK residents and businesses to destinations and markets around the world. This directly increases the amount of freight that can be transported by air and enables businesses to connect, facilitating trade, tourism, and inward investment. Together these boost the productive capacity of the UK economy which can increase employment and economic activity.

8.8.3 These wider catalytic effects have been assessed in two different ways.

8.8.4 The Oxera methodology estimates the net impacts of the Project across the six authorities. This is based on an observed relationship that shows that a 1% increase in traffic through the airport translates into a 0.13% increase in employment across the area. This is effectively a "top-down" assessment – it is an observed relationship at a macroeconomic level. It therefore takes account of all changes in the sub-regional economy (both positive and negative) that expansion of

Gatwick would bring. It is therefore effectively an assessment of the net impact, after allowing for displacement (e.g. jobs that are lost or that would have been created elsewhere anyway).

8.8.5 In order to isolate the catalytic element from the Direct, Indirect and Induced (DII) impacts, the latter are subtracted from Oxera's estimate of the total economic impacts associated with the expansion of the airport (based on the 1:0.13 relationship). This slightly underestimates the true level of catalytic impacts because the DII impacts that are subtracted are gross, i.e. they do not take account of the potential for displacement. For this reason, the numbers reported now are lower than those reported in the Preliminary Environmental Information Report (PEIR) that was published as part of the NRP's DCO application consultation.

8.8.6 The following table sets out the total net employment estimates for the Six Authorities and how they translate into the estimated catalytic employment effects.

Table 8.8-1 Catalytic Employment Impacts

	2029	2032	2038	2047
Total net employment impact	4,500	14,000	13,700	12,800
Combined DII employment	2,000	6,400	6,600	6,400
Catalytic effect	**2,500**	**7,600**	**7,200**	**6,500**

8.8.7 The following table then breaks down the catalytic effects into the different spatial scales.

Table 8.8-2 Catalytic Economic Impacts

	2029	2032	2038	2047
Catalytic GVA				
Six Authorities	£168m	£532m	£538m	£550m
of which Labour Market area	£97m	£307m	£311m	£318m
of which Gatwick Diamond	£40m	£127m	£128m	£131m
Catalytic employment				
Six Authorities	2,500	7,600	7,200	6,500
of which Labour Market area	1,400	4,400	4,100	3,700
of which Gatwick Diamond	600	1,800	1,700	1,500

8.8.8 Oxford Economics has taken a different approach to estimating the catalytic impacts – it estimates them at the national level, based on a relationship between air connectivity and productivity, controlling for other factors such as each country's level of openness, corruption, investment, and educational attainment. This gives rise to both short-run and long-run impacts. It finds that a one standard deviation increase in air connectivity is associated with a 0.9% increase in labour productivity in the short run and an approximate 11% increase in the long run.

8.8.9 Oxford Economics' assessment of the Project's impacts indicate an increase in connectivity compared to 2019 levels. The Northern Runway Project would contribute to the UK aviation network, delivering connectivity benefits that will result in an estimated long-term productivity boost of 0.88% to UK GDP in 2038. However, the long-term connectivity benefit would fall slightly, to 0.80% in 2047, as a reflection of the UK's declining future share of global connectivity, which more than offsets the increase in passenger numbers at the Airport in this scenario. In the Base Case, the long-term productivity boost would fall to 0.73% in 2038 and 0.67% in 2047.

8.8.10 This means the NRP could deliver a long-term boost to the productive capacity of the economy compared to the Base Case of 0.15% in 2038, falling to 0.13% in 2047.

8.8.11 The ability of the economy to use that productivity boost is subject to a degree of uncertainty and this has not been estimated by Oxford Economics.

8.8.12 For context, the UK economy was just over £2.2 trillion in 2022. A boost of 0.15% would equate to £3.3bn. At current levels of GDP per worker (around £70,000), that would equate to an extra 47,000 jobs across the UK economy.

8.8.13 These would be most likely to be concentrated in areas where business passengers in particular flew from or to. Using passenger data to estimate where the economic activity would be boosted allows the jobs to be allocated to different spatial scales. The indicative results for the Gatwick Diamond and the Six Authority areas are shown in table 8.8-3.

Table 8.8-3 Catalytic Employment Impacts (Gross)

	2038	2047
Gatwick Diamond	7,500	6,900
of which Six Authorities	17,600	15,900

8.8.14 Unlike the Oxera estimates, these are gross and do not take account of displacement (ie loss of economic activity elsewhere).

8.9. Wider Economic Impacts

Inbound Tourism

8.9.1 Oxford Economics finds that the Northern Runway Project would lead to a substantial increase in the economic contribution of Gatwick-facilitated tourism to the UK economy. Gatwick-facilitated tourism could contribute an additional £2.37 billion in 2038 and £2.39 billion in 2047 (in 2019 prices) to the UK economy due to the Northern Runway Project. Gatwick-facilitated tourism would also lead to an increase in employment of 35,500 jobs in 2038 due to the Project. However, as a consequence of improving labour productivity, the employment impact would fall slightly to 31,600 additional jobs with the Project in 2047.

Freight

8.9.2 Expanding air transport movements will boost import volumes, increasing the trade-facilitated impact on the UK economy. With the Northern Runway Project, imports would increase to more

than double their 2019 volume by 2047, to 174,200 tonnes. Facilitating these imports would generate £10.59 billion of GVA and 160,400 jobs in 2047, around 20% higher than the equivalent activity facilitated in the Base Case.

8.10. Economic Cost-Benefit Analysis

Introduction

8.10.1 The cost-benefit analysis has been undertaken in line with the HM Treasury Green Book framework, which provides guidance on how to assess the costs and benefits of a scheme or policy. Within that framework, the DfT has guidance for cost–benefit analysis in the transport sector, known as Transport Analysis Guidance (TAG). This is designed for assessing public sector interventions in the transport market, rather than determining planning applications.

8.10.2 GAL did not need to undertake a TAG appraisal, as the development will be commercially funded by the airport itself so it is not a public sector intervention in the market that requires Government approval for funding.

8.10.3 The analysis below has been done at the national level only and is a robust assessment of the main socio-economic welfare effects. These sit alongside the main assessment of impacts on jobs and GVA set out above.

8.10.4 The effects that have been assessed are:

- User Benefits (passengers, airlines and GAL itself)
- Government Revenues
- Wider Economic Impacts
- Environmental Costs (including carbon)
- Scheme Costs

8.10.5 In line with the Green Book, all values are discounted at the HM Treasury standard discount rates over a 60-year appraisal period (from opening in 2029) to provide a Net Present Value or the costs and benefits over that period. All figures are in 2010 prices and values.

8.10.6 In addition, there are various benefits which have not been monetised for this part of the assessment and so the below analysis is a conservative reflect of the Project's economic cost-benefit.

User Benefits

8.10.7 By alleviating the capacity constraints at Gatwick Airport, the Project would increase the number of flights that the airport can accommodate, and therefore enable airlines to increase service frequencies. Congestion premiums that are related to capacity constraints and are reflected in air fares would decrease, leading to lower fares for passengers. As a result, there would be a transfer of benefits from airlines to passengers. Because of Gatwick’s position in the London airport system, these impacts would extend to all passengers in the London aviation market. It is estimated that the net benefits to passengers and airlines would be £10.8bn in 2010 prices and values.

8.10.8 In addition, the increase in the number of passengers with the Project would increase the revenues of London airports, resulting in net benefits of £2.2bn. Overall, the net benefits accruing to passengers, airlines and airports are estimated to be £13.1bn.

Government Revenues

8.10.9 The increase in traffic would also result in higher Air Passenger Duty ('APD') revenues for the government of £2.5bn.

Wider Economic Impacts

8.10.10 The Project is also expected to have impacts beyond passengers, airlines and airports. By providing increased connectivity, the Project would benefit businesses, leading to benefits of just over £13.5bn. This excludes the non-monetised effects set out below.

8.10.11 Set against this are the costs from increased road traffic due to the Project, which are estimated at just under £4.0bn.

8.10.12 The net benefit of wider economic impacts is therefore approximately £9.5bn.

Environmental Costs

8.10.13 Increased activity at the airport would also have environmental impacts – from increased noise, air quality impacts and greenhouse gas emissions.

8.10.14 The net social costs of changes in noise levels are estimated to be £9.2m.

8.10.15 In addition, as a result of the Project there would be a change in air quality levels due to increased air and surface access travel. The monetised costs of this change in air quality are estimated to be £83.5m.

8.10.16 Lastly, the Project is expected to have an impact on the level of greenhouse gas ('GHG') emissions from four sources: aviation, surface access, construction, and the airport's operations. These GHG costs are estimated to be £1.3bn.

8.10.17 In total, the social costs of the environmental impacts are estimated to be £1.4bn. To reflect uncertainties in the carbon price trajectories and air quality costs, a sensitivity range was produced that shows that the environmental costs would be in the range of £0.6bn to £2.2bn.

Scheme Costs

8.10.18 The capital and operational costs of the scheme are estimated at £2.4bn.

Net Present Value of the Project

8.10.19 Table 8-10.1 summaries the costs and benefits of the scheme as they would be assessed by Government. It shows that the scheme has a very high Net Present Value (NPV), i.e. the benefits of the scheme over time, significantly outweigh its costs, including its environmental costs. This does not even include all of the potential benefits, as the following Chapter sets out.

Table 8.10-1 - Summary of net present value of the Project (£bn)

	Low	Central	High
Passenger benefits	–	150.1	–
Provider benefits	–	-137.1	–
Wider economic impacts	–	12.0	–
Environmental costs	-2.2	-1.4	-0.6
Scheme costs	–	-2.1	–
Net present value of the Project	**20.7**	**21.6**	**22.3**

Non-Monetised Benefits

8.10.20 The above estimates do not account for a number of additional benefits that the Project is expected to provide, but which are difficult to quantify, or which have not been included in the NPV due to concerns about double-counting.

8.10.21 For example, additional local employment generated directly and indirectly by the Project may result in workers switching jobs. This could bring positive employment impacts if the new positions are more productive, which could amount to £77m. Similarly, additional productivity benefits could arise as a result of increased concentration of economic activity in the local area, which would facilitate greater exchange of ideas and technological spillovers. These benefits are known as agglomeration effects, and are estimated at £0.7bn. However, these two impacts do not factor in the potential displacement of workers from other areas, and hence are not included in the NPV of the Project.

8.10.22 Another benefit could arise from improvements in national productivity through increased trade facilitated by the Project. These improvements in productivity are estimated to range between £4.0bn and £6.7bn over the course of the appraisal period. However, these trade-related benefits have been excluded from the NPV of the Project due to concerns about double-counting with the user and provider impacts. Similarly, the improved access to international markets associated with the Project could facilitate foreign direct investment ('FDI'). For example, multinational firms could experience a reduction in costs as the increased connectivity would facilitate face-to-face interactions. Although this improvement in costs could affect international investment decisions, the productivity impacts related to FDI changes are difficult to disentangle from trade-related impacts and hence have not been quantified.

8.10.23 Additional welfare effects arising from the Project could be associated with increased spending by the additional leisure passengers accommodated by the Project. This spending could result in productivity gains in the economy as, for example, higher activity in the supply chain of the tourism sector might direct labour to more productive jobs.

8.10.24 Capacity constraints also influence the level of competition between airports. The additional capacity would alleviate the capacity constraints at Gatwick Airport, enabling Gatwick Airport to provide a stronger competitive constraint on other airports in the London market in terms of competition for new and existing airlines and passengers.

8.11. Conclusions

8.11.1 Gatwick Airport already makes a significant contribution to the local and national economies. It provides approximately 24,000 direct jobs, £1.75bn of GVA and just over £1bn in taxes.

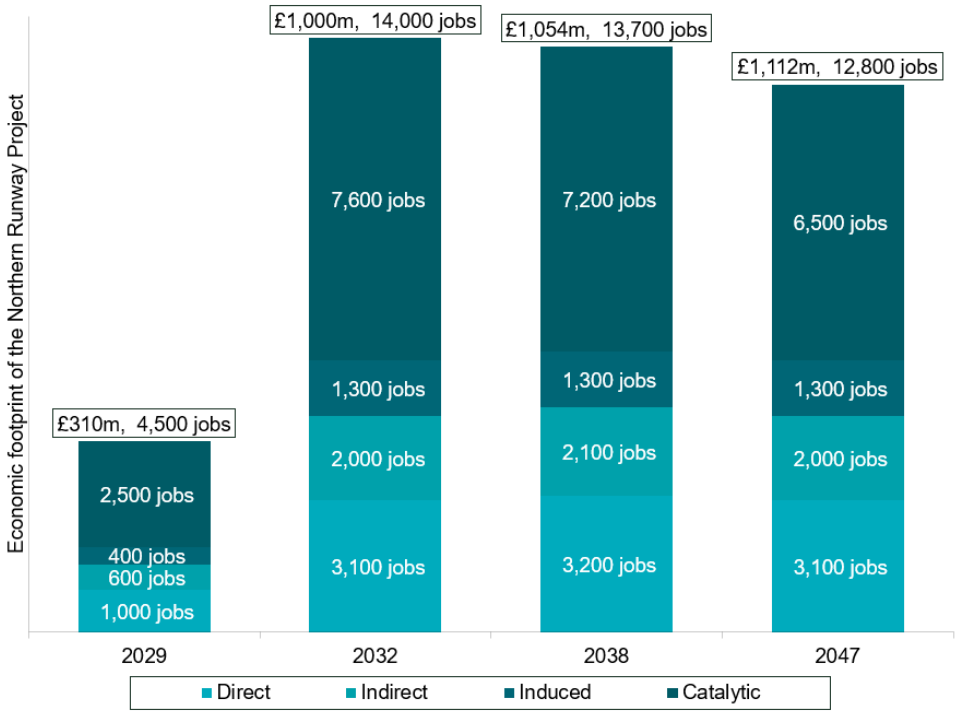
8.11.2 The NRP will further enhance that contribution through both construction and operation.

8.11.3 During construction the workforce will peak at just under **1,400 workers**, with over 600 of these expected to be drawn from the Six Authority area (East and West Sussex, Surry, Kent, Croydon and Brighton).

8.11.4 The analysis shows that the Project will increase the scale of the airport's impact in the three study areas around the airport and in the UK as a whole, in terms of both employment and GVA. This impact is a result of direct activity on site associated with servicing additional air traffic, indirect activity in the supply chain, induced activity from individuals employed at Gatwick or in the supply chain spending their wages, and businesses locating or expanding in the local area due to improved connectivity offered by the Project.

8.11.5 Figure 8-11.1 below shows the economic impact of the Project (in terms of GVA and employment) by type of impact across the assessment period. By the time the runway is fully operational in 2032, it will create a net increase in employment (i.e. after allowing for displacement) of **14,000 jobs** and create an extra **£1bn in GVA** across the Six Authorities area.

Figure 8.11-1 Summary of Economic Impacts



8.11.6 Oxford Economics has estimated that it could provide a one-off boost to the capacity of the economy of **0.15% of GDP** (equivalent to approximately £3.3bn in 2019) through the benefits of improved connectivity that support trade and investment.

8.11.7 It will also significantly boost tourism's contribution to **GDP by nearly £2bn** and support a further **26,000 jobs**.

8.11.8 The economic cost-benefit analysis shows that the scheme's benefits significantly outweigh its costs (including environmental and carbon costs) with a **Net Present Value (NPV) of around £21bn**. In addition, there would be significant non-monetised effects, including employment and trade-related effects set out above.

Glossary

8.12. Glossary of Terms

Figure 10.1-1 - Glossary of Terms

Term	Description
AirTOP	Modular software that allow users to assess and improve airport and airspace capacity and complexity by modeling passenger terminal, airside and vehicle movements, creating airspace and air traffic models, simulating controller tasks and more. The software can provide a true terminal to terminal fast time simulation experience.
A320 Neo	New generation short-haul aircraft built by Airbus
A350	New generation long-haul aircraft built by Airbus
A380	Airbus A380. The largest passenger aircraft currently in service
ANS	Air Navigation Solutions – the provider of ATC services at Gatwick
APF	2013 Aviation Policy Framework
APU	Auxiliary Power Unit
AQMA	Air Quality Management Area
ASAS	Airport Surface Access Strategy
ATC	Air Traffic Control
ATM	Air Transport Movement
B737 Max	New generation short-haul aircraft built by Boeing
B787	New generation long-haul aircraft built by Boeing
BAA	The former owners of Gatwick Airport
BAP	Biodiversity Action Plan
CAA	Civil Aviation Authority
CAGR	Compound Annual Growth Rate
Category 1 Airline Waste	Waste from non-EU flights comprising food waste or anything mixed with it
CDA	Continuous Descent Approach
CIP	Capital Investment Programme
CMA	Competition and Markets Authority
CTA	Common Travel Area – Ireland, Channel Islands, and the Isle of Man
dB / dBA	Decibel – a measure of the intensity of sound levels / The ‘A’ weighting refers to a scale corrected for the way human ears perceive noise
DCO	Development Consent Order – planning consent process for Nationally Significant Infrastructure Projects
DRO	Dual Runway Operations
DfT	Department for Transport
E-gates	Automated gates for checking machine-readable passport
EIA	Environmental Impact Assessment

Term	Description
EHS	Environmental, Health and Safety
ERCD	Environmental Research and Consultancy Department (of the CAA)
ES	Environmental Statement
ETS	European Union – Emissions Trading Scheme
FASI(S)	Future Airspace Strategy Implementation (South) – programme to update and transform the airspace above South East England
FEGP	Fixed Electrical Ground Power
GACT	Gatwick Airport Community Trust
GAL	Gatwick Airport Limited – the company which operates Gatwick Airport
GATCOM	Gatwick Airport Consultative Committee
Gatwick Diamond	Business led private/public sector partnership promoting economic growth in a defined area between Croydon and Brighton. Part of the Coast to Capital Local Enterprise Partnership.
Gatwick Foundation Fund	A fund launched by GAL in 2016 to oversee the allocation of the donations to good causes in the local area
GDP	Gross Domestic Product
GHG	Green House Gas emission
GIP	Global Infrastructure Partners – the largest shareholder of Gatwick Airport
GPU	Ground Power Unit – to power aircraft systems when parked on stand
GVA	Gross Value Added
GWR	Great Western Railway
Ha	Hectares
HOSS	Home Owners Support Scheme
ICAO	International Civil Aviation Administration
'Kiss and Fly'	Passengers who are driven to or from the airport by private car
LAMP2	London Airspace Management Programme 2
LEP	Local Enterprise Partnership
LGW	London Gatwick Airport
LCC	Low Cost Carriers
LTO	Landing and Take-off cycle
Mppa	Million passengers per annum
MSCP	Multi-storey Car Park
NATS	The provider of en-route air traffic control and upper airspace management in the UK
NMB	Noise Management Board
NO2	Nitrogen Dioxide
North West Zone	An area of the airport lying adjacent to the northern boundary, which contains the north west part of the airfield, the Virgin hangar, cargo sheds and long-stay car parking
NPR	Noise Preferential Route for departing flights
NPS	National Policy Statement produced by Government

Term	Description
NSIP	Nationally Significant Infrastructure Project. Large scale projects as defined by the 2008 Planning Act
NT	North Terminal
PEIR	Preliminary Environmental Information Report
PM10	Airborne particles that have a median diameter of 10 microns
PM2.5	Airborne particles that have a median diameter of 10 microns
Quality Service Monitor (QSM)	A process GAL uses for measuring and monitoring passenger satisfaction performance
RBBC	Reigate and Banstead Borough Council
RET	Rapid Exit Taxiway
RPI	Retail Price Index
SA	Sustainable Aviation
Second Decade of Change to 2030	Gatwick's 10-year sustainability strategy
Section 106 Agreement	2008 Section 106 legal agreement between Gatwick airport, West Sussex County Council and Crawley Borough Council
Section 52 Agreement	GAL's 1979 legal agreement with West Sussex District Council regarding the provision of additional runway capacity
ST	South Terminal
Stand	Aircraft parking position on the apron
STEM	Science, Technology, Engineering and Maths
STW	Sewage Treatment Works
SUDS	A sustainable drainage system designed to treat and discharge surface water in a more sustainable way than traditional systems
tCO2e	Tonnes of carbon dioxide equivalent – measure for comparing all greenhouse gas emissions
WSCC	West Sussex County Council

9 References

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10 Appendix 1 Airfield Performance Benefits

Results of AirTOP Simulation Modelling of Airfield Performance

10.1.1 GAL has undertaken fast-time AirTOP simulation modelling of the airfield in dual runway operations. This has been used to inform both the layout and configuration of proposed changes to the airfield and to test its capacity and performance, to ensure that the airfield can operate efficiently and effectively in processing departing and arriving aircraft.

10.1.2 Simulation modelling has been undertaken for the years 2029 and 2038 under both westerly and easterly operations, for the busy day in August, when Gatwick would be operating close to its peak.

10.1.3 Simulation modelling has also been undertaken of future baseline operational performance in 2029 and 2038 without the NRP.

10.1.4 A note on the Simulation modelling that has been undertaken is provided at Annex 8 of Appendix 4.3.1 of Chapter 4 of the Environmental Statement.

Operational Performance of NRP in Westerly Operations

10.1.5 The tables below compare the results of the simulations for departures taxi-time (which includes holding on taxiways and at the runway), arrivals taxi time and arrivals airborne holding for westerly operations in 2029 and 2038 for the baseline and dual runway operations across the day (24hr period) and in the peak morning period 0600 – 1000 (Local Time). Improvements in taxi and holding times of greater than 1 minute are highlighted green, whilst marginal improvements and deteriorations in taxi and holding times of less than 1 minute are coloured amber. There are no increases in taxi or holding times of greater than 1 minute.

Figure 9.1-1 - Modelled Taxi and Holding Times for Westerly Operations – 2029

	Baseline 2029		Dual Runway Operations 2029	
Category	**0600 – 1000 Local Time**	**Average (mean) 24hr**	**0600 – 1000 Local Time**	**Average (mean) 24hr**
Departures Taxi Time (mins)	20.3	17.1	**13.7**	**12.9**
Arrival Taxi Time (mins)	9.5	8.5	**9.8**	**9.0**
Arrival Airborne Holding Time (mins)	5.1	3.2	**3.2**	**3.0**

Figure 9.1-2 - Modelled Taxi and Holding Times for Westerly Operations – 2038

	Baseline 2038		Dual Runway Operations 2038	
Category	**0600 – 1000 Local Time**	**Average (mean) 24hr**	**0600 – 1000 Local Time**	**Average (mean) 24hr**
Departures Taxi Time (mins)	20.4	17.1	**17.9**	**16.0**
Arrivals Taxi Time (mins)	10.0	8.7	**10.8**	**9.4**
Arrival Airborne Holding Time (mins)	6.3	3.4	**4.0**	**3.7**

Departures Taxi-times

10.1.6 In 2029 and 2038 average departure taxi times reduce in both the peak morning period and 24hr period compared to the future baseline:

- In 2029 taxi times reduce in the peak a.m. period by over 6 minutes from over 20 minutes in the baseline to less than 14 minutes in DRO. Average taxi times across the 24hr period also reduce by 4 minutes from over 17 minutes to less than 13 minutes.
- In 2038 taxi times reduce by 2.5 minutes in the peak a.m. period from over 20 minutes in the baseline to less than 18 minutes in DRO. Average taxi times reduce marginally from just over 17 minutes to 16 minutes.

Arrivals Taxi-times

10.1.7 In 2029 and 2038 average arrival taxi times increase very slightly in both the peak morning period and 24hr period compared to the future baseline:

- In 2029 taxi times increase marginally in the peak a.m. period from 9.5 minutes in the baseline to 9.8 minutes in DRO. The increase is mitigated by the decrease in airborne holding which reduces by nearly 2 minutes such that overall there is still an operational benefit on arrivals in the morning peak. Average taxi times across the 24hr period increase by 30 seconds from 8.5 to 9 minutes.
- In 2038 taxi times increase in the peak a.m. period by less than 1 minute from 10 minutes in the baseline to 10.8 minutes in DRO. The increase is mitigated by the decrease in airborne holding which reduces by over 2 minutes such that overall there is still an operational benefit on arrivals in the morning peak. Average taxi times also increase by less than 1 minute from 8.7 minutes to 9.4 minutes.

Airborne Holding

10.1.8 In 2029 average airborne holding time reduces in both the busy period and 24hr period. In 2038 airborne holding reduces in the busy period but increases slightly in the 24hr period:

- In 2029 airborne holding reduces in the peak a.m. period from over 5 minutes in the baseline to 3.2 minutes in DRO. Average airborne holding across the 24hr period reduces slightly from 3.2 minutes to 3 minutes.

- In 2038 airborne holding reduces in the peak a.m. period from over 6 minutes in the baseline to 4 minutes in DRO. Average airborne holding across the 24hr period increases from 3.4 minutes to 3.7 minutes.

Operational Performance of NRP in Easterly Operations

10.1.9 Whilst AirTOP simulation modelling has been undertaken for easterly DRO in 2029 and 2038, modelling has not been undertaken for the future baseline. It is therefore not possible to compare DRO and future baseline operational performance for easterly operations. It is however possible to compare the simulated easterly DRO operations in 2029 and 2038 with actual performance in peak summer 2018[61].

10.1.10 The following table compares the simulation results for easterly operations in 2029 and 2038 with 2018 for the busy day in August, when Gatwick was operating close to its peak. Improvements in taxi and holding times of greater than 1 minute are highlighted green, whilst marginal improvements and deteriorations in taxi and holding times of less than 1 minute are coloured amber. There are no increases in taxi or holding times of greater than 1 minute.

Figure 9.1-3 - Simulation results for Easterly Operations and for Peak Summer 2018, 2029 and 2038

Category	Measure	Peak Summer 2018	DRO 2029	DRO 2038
Departures Taxi Time (mins)	Average (mean) 24hr	20.68	17.70	20.11
Arrivals Taxi Time (mins)	Average (mean) 24hr	5.76	5.92	6.19
Airborne Holding (mins)	Average (mean) 24hr	5.09	3.87	5.43

Departures Taxi-times

10.1.11 In 2029 and 2038 average departures taxi times across the 24hr period are less than in 2018:

- In 2029 average taxi times across the 24hr period reduce by 3 minutes from over 20 minutes in 2018 to less than 18 minutes.
- In 2038 Average taxi times reduce very marginally, remaining at over 20 minutes.

Arrivals Taxi-times

10.1.12 In 2029 and 2038 average arrival taxi times increase very slightly across the 24hr period:

- In 2029 average taxi times across the 24hr period increase slightly, in both cases being less than 6 minutes.
- In 2038 average taxi times across the 24hr period increases from just under to just over 6 minutes.

[61] The comparison is with Summer 2018 because the calibration of the AirTOP simulation model was based on observations made at Gatwick in Summer 2018 peak months.

Airborne Holding

10.1.13 In 2029 average airborne holding reduces compared to 2018. But in 2038 average airborne holding is higher than 2018.

- In 2029 average airborne holding reduces from just over 5 minutes to less than 4 minutes.