YOUR LONDON AIRPORT
Gatwick

Our Northern Runway: *making best use of Gatwick*

CONSULTATION OVERVIEW DOCUMENT

Autumn 2021

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Foreword

Here at Gatwick - we are looking forward. I'm proud that Gatwick Airport is a key piece of national infrastructure and that we have remained operational since the pandemic started. I'm also proud that Gatwick has historically been one of the world's busiest single runway airports. In 2019 we had seen a decade of growth to more than 46 million passengers, supporting over 135,000 jobs nationally, and making a contribution of £8.3bn to the UK economy every year.

Looking forward - by the end of the next decade we will need more capacity to maintain efficient operations, improve resilience and meet passenger demand. This is why we would like to bring our existing Northern Runway into routine use, using a sustainable approach which maximises the use of our existing infrastructure. The Project proposals are largely confined within our current airport boundary, are low impact and are in line with Government policy of making best use of existing runways. We are taking our plans forward now to be ready to meet demand in the future because of the time it would take to secure approvals, complete construction and start dual runway operations.

In January 2019 we concluded a 12-week public consultation on our Master Plan. This is where we first explained our scheme. Two thirds of those who responded were supportive. We listened to points raised in that public consultation, reviewed our plans, and in July 2019 we announced we would be taking this Project forward through the Development Consent Order (DCO) process.

Both 2020 and 2021 have been challenging years for everyone and the impact of the pandemic on Gatwick has been devastating due to unprecedented travel restrictions and long periods of lockdown. Whilst we still face many challenges, we are confident we will return to pre-pandemic passenger levels in the next four to five years and that by the end of the 2020s, passenger levels will have returned to broadly where they would have been had the pandemic not occurred.

Our Northern Runway proposals will help boost our economy, maintain competition within the London market, open up new connections and support a Global Britain. They will also open up exciting new employment opportunities, create additional jobs and further enable travel to visit family and friends, take a leisure break or foster trade and business links. Our proposals are forward looking and seek to bring significant benefits for our region.

At the same time, we are acutely aware of our responsibilities to the future of the planet - on climate change and the environment. We will grow in a way that supports the Government in achieving its commitment to net zero emissions by 2050. On noise, we have proposed a noise 'envelope' that provides certainty for residents and allows the benefits of quieter aircraft to be shared with them. We will seek to deliver our proposals in a sustainable way, addressing environmental and community impacts whilst also helping the Government achieve its climate change target.

I am confident in our future and very pleased to present these proposals for public consultation. We would like to hear views from local residents and anyone interested in our proposals. I encourage everyone to take time to review our plans and respond by 1 December 2021.

Stewart Wingate
Chief Executive Officer, Gatwick Airport

1 Introduction

1.1 Background

1.1.1 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 ranked 12th globally for the number of long-haul destinations served. Until 2017, Gatwick had the world's busiest single runway (55 aircraft movements per hour) and still has the world's busiest single runway operation during the day. Overall, in 2019, Gatwick contributed £8.3 billion to the UK economy and supported over 135,000 jobs.

1.1.2 Gatwick has experienced a sustained period of growth since changing ownership in 2009, with passenger numbers increasing from 31 million to more than 46 million a year in 2019. Government forecasts[1] have already been outstripped by actual growth since predictions were published in 2017.

1.1.3 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 our investment programme were paused but these are expected to restart soon.

1.1.4 In addition to these projects, we are proposing to bring forward a proposal to add further longer-term capacity to Gatwick's infrastructure. We are calling this proposal our **'Northern Runway Project'** (the Project). The Project will enable dual runway operations from both our existing main and northern runways – the latter being proposed for routine use whereas it is currently only used infrequently. It will contribute towards meeting national demand for aviation growth including providing resilience within the London airport system - and cater for more Gatwick-specific demand within our catchment markets.

1.1.5 The COVID-19 pandemic has 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 as a result of both Government-imposed restrictions on air travel and reduced passenger demand driven by low consumer confidence. Whilst the pandemic has continued to have an impact on passenger demand and traffic levels throughout 2021, the recent easing of Government restrictions has led to traffic levels starting to recover.

1.1.6 Beyond this, whilst recognising the current market uncertainty and potential structural impacts around business travel, 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. Therefore, it is expected that overall demand for air travel will in time recover to previous levels and we are confident that passenger and airline demand at Gatwick will continue to grow thereafter.

1.1.7 The Project seeks permission to bring our existing northern runway, which is currently restricted to use as a standby/emergency runway, into routine operation alongside continued use of our main runway. It is expected to open in 2029 ready to meet demand for additional capacity that

[1] DfT UK Aviation Forecasts – Moving Britain Ahead (October 2017)

cannot be provided on the main runway.

1.1.8 Figure 1.1 below provides a summary of our Project, whilst Figure 1.2 explains how the main and northern runway would operate together.

Figure 1.1 : Our Northern Runway Project

Our Northern Runway Project involves bringing our existing northern runway, which is currently restricted to use as a standby/emergency runway, into routine operation alongside continued use of our 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 centreline 12 metres 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;
- reconfiguration of existing utilities, including surface water, foul drainage and power; and
- landscape/ecological planting and environmental mitigation.

It is anticipated that by 2038, our proposals would enable Gatwick to serve 75.6 million passengers with 382,000 commercial ATMs in 2038, or 80.2 million passengers with 386,000 ATMs per annum in 2047.

Figure 1.2 : How our runways will operate together

Our 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 for smaller aircraft (less than but including Code C); and
- there would be controlled dependency between the two runways to enable safe crossing of the northern runway by arrival flights.

1.1.9 Our Project will be vital to enabling efficient operations at the airport and successfully meeting growing future demand in the UK for air travel and will ensure that we are making best use of our existing facilities, in line with UK government aviation policy.[2]

1.1.10 In addition to enabling an increase in passenger throughput to around 75.6mppa by 2038 and to 80.2mppa by 2047, our estimates suggest that the total economic footprint of the Project in the UK will be £1.6bn of GVA and 20,300 jobs in 2038, which will further increase to £1.8bn of GVA in 2047.

1.1.11 New global connections will also create new business opportunities for the national and regional economy.

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

1.1.12 Taking into account benefits to passengers and increased government taxation and other revenues, whilst discounting costs to the environment, including carbon, our economic appraisal assigns a net present value to the Project over its lifetime of between £10.5bn to £22.0bn in 2010 prices[3] – with a mid-point greater than the estimated value of projects such as London's Crossrail (£12.3bn).

1.1.13 Our proposals would be privately financed and delivered with minimal impact on existing airport operations.

1.1.14 It is by unlocking additional capacity, largely within the airport's existing footprint, that we can best respond to demand and grow in the most sustainable way; building greater resilience in the UK's airports system, increasing competition, offering greater choice to customers, and enhancing jobs, trade, connectivity and tourism.

1.1.15 Feedback from public consultation on our draft Master Plan in 2018 broadly welcomed making the best use of existing runways as our pathway to meet growing demand. It also highlighted a need for more information on key areas such as noise, other environmental impacts, transport and local infrastructure needs.

1.1.16 We have undertaken further work in these areas and, through this consultation,we are now pleased to be seeking further views on our proposals.

1.2 Growing Sustainably

1.2.1 Sustainability has been a key part of Gatwick's transformation since 2009. We continue to work towards being the UK's most sustainable airport and our pledge to reach net zero for direct emissions before 2040, which we are already well advanced on the path to achieving.

1.2.2 We published our second Decade of Change sustainability policy in June 2021[4]. This takes us up to 2030 and builds on the success of our first Decade of Change Strategy that ran from 2010 to 2020[5].

1.2.3 Our approach to a sustainable Gatwick remains focused on what matters:

- **People and Communities** - Support our people and invest in our local communities.
- **Net Zero Emissions** - Continue our transition to Net Zero and improve air quality.
- **Local Environment** - Reduce our impact on the local environment and waste.

1.2.4 In addition to addressing local environmental impacts, we also recognise fully the urgency of tackling global climate change and reducing global greenhouse gas emissions, to which aviation is a major contributor.

1.2.5 We strongly support the UK Government in taking a lead by becoming the first country in the world to set a legally binding net zero commitment for greenhouse gas emissions in 2050, which include the UK's share of international aviation emissions.

[3] Oxera reports national impact estimates in 2010 prices which is the price base that are expected by DfT as set out in the DfT's TAG
[4] https://www.gatwickairport.com/globalassets/company/sustainability/reports/2021/decade-of-change-policy-to-2030.pdf
[5] https://www.gatwickairport.com/globalassets/company/sustainability/reports/2020/decade-of-change-goals-performance-2020.pdf

1.2.6 Gatwick is committed to low-carbon growth. Our first Decade of Change policy set a commitment to achieve 50% reduction on 1990 Scope 1 and 2 emissions by 2020 - a target we achieved two years ahead of schedule. In 2017, we also became the first of the London airports to achieve carbon neutrality through use of 100% renewable electricity and Gold Standard carbon credits to offset ground fuel emissions. Our second Decade of Change policy takes these commitments further, including to achieve 80% reduction on 1990 Scope 1 and 2 emissions by 2030[6] with a longer-term goal to achieve 'net zero' before 2040.

1.2.7 We have now commenced the work needed to explore the further actions we will need to take to fully play our part in supporting and accelerating the reduction in carbon emissions as part of both our current operations and with the proposed Project. We are confident that our proposals for making best use of Gatwick's runway capacity would not compromise the Government's net zero UK carbon target. More information on carbon and climate change is provided later in this document.

1.3 Development Consent Order

1.3.1 Our Project is classed as a Nationally Significant Infrastructure Project (NSIP) because it would increase passenger throughput at Gatwick by more than 10 million passengers per year and because of the scale of the improvements we are proposing to the North and South Terminal roundabouts. We will therefore need to make an application under the Planning Act 2008 (the 'Planning Act') for a permission known as a development consent order (DCO) to construct and operate the Project.

1.3.2 A DCO is a statutory instrument (essentially a piece of legislation) that can combine planning consent to develop, operate and maintain a major project with other important planning and environmental approvals that would otherwise need to be applied for separately.

1.3.3 Pre-application consultation for a DCO for major infrastructure projects is an essential requirement of the process. We are seeking your views on our proposals to help us shape our plans and to further identify and consider important issues.

1.3.4 Following this consultation, we will take account of your feedback and finalise our proposals. We will then submit our application for development consent to the Planning Inspectorate, who will process and examine our application, and encourage the submission of views from interested parties, before making a recommendation to the Secretary of State for Transport, who will make the final decision on whether or not to grant consent. The steps in the process and where we are now are shown in the diagram below. More information on the NSIP planning process is available at: http://infrastructure.planninginspectorate.gov.uk

[6] Power and energy used on site and in our operational vehicle fleets and equipment

1.4 The Consultation

1.4.1 We are seeking your views on our Northern Runway Project.

1.4.2 The consultation is being carried out in accordance with our Statement of Community Consultation (SoCC) which we published in August 2021. This is available online at: **www.gatwickairport.com/futureplans.** The SoCC describes how we will consult with local communities about our proposals.

1.4.3 Our proposals are described in this document which includes an overview of our proposals and our approach to managing their impacts. We have also prepared a **Consultation Summary Document** which provides outline information.

1.4.4 There are a number of other documents forming part of this consultation:

- **Consultation Questionnaire** : the main mechanism for collecting feedback, it includes questions on areas where your feedback will help to shape our proposals
- **Volume 1** : Preliminary Environmental Impact Report (PEIR) - sets out the environmental considerations associated with our proposals and how we have assessed them, along with our proposed mitigation measures. There is also a Non-Technical Summary (NTS) of the PEIR
- **Volume 2** : PEIR Figures
- **Volume 3** : PEIR Appendices
- **Other technical documents** including our:
    - Economic Impact Report
    - Noise Insultation Scheme
    - Draft Outline Employment, Skills and Business Strategy
    - Land Use Masterplans and Construction Phasing Plans which comprise:
        - Existing Masterplan 2021
        - Future Baseline Masterplan
        - Proposed Works Masterplan
        - Phased Construction Plan 2026
        - Phased Construction Plan 2029
        - Phased Construction Plan 2032

1.4.5 This document provides an overview of our proposals, outlining the need for, and benefits of the Project and how we will mitigate the environmental impacts. It is structured as follows:

- **Chapter 1 Introduction** - explains the background to our proposals, our approach to consultation, and outlines the DCO process
- **Chapter 2 Gatwick Today** - provides information about Gatwick and our recent growth, along with updates on other projects across the airport
- **Chapter 3 Our Project Proposals** - explains the proposals in more detail, including the work we have undertaken to develop them
- **Chapter 4 Our Surface Access Proposals** - sets out our proposed improvements to transport infrastructure to support the Northern Runway Project
- **Chapter 5 Construction and Phasing** – describes our phased approach to building our proposals, along with the predicted timing of works
- **Chapter 6 The Need for Our Northern Runway Project** – details our operational need requirements and airport traffic forecasts
- **Chapter 7 The Economic Benefits of Our Northern Runway Project** – gives details of the economic benefits of making best use of our existing runways
- **Chapter 8 Summary of Effects** - explains how we are proposing to mitigate the assessed effects of our proposals on local communities and the environment
- **Chapter 9 Compulsory Acquisition and Compensation** – provides a summary of our approach to land assembly and compensation
- **Chapter 10 Next Steps** – explains what will happen after the consultation is finished

1.5 Responding to the Consultation

1.5.1 This consultation will run for 12 weeks, from **9th September 2021 until 11:59pm on 1st December 2021** and is open to anyone with an interest in our proposals who considers they may be directly or indirectly affected, or who has a view that they would like to be considered. We also welcome feedback from all organisations with an interest as well as from landowners who may be affected by the proposals.

1.5.2 Due to responses to COVID-19, our approach to public consultation has changed and there is a greater reliance on virtual or online engagement activity. We are using a mix of materials, methods and techniques to remove barriers, promote inclusivity, and encourage engagement from local communities, while also complying with any pandemic-related restrictions should they be in place during the consultation period. Full details of how we are consulting with the local community are provided in our SoCC which has been prepared in line with Section 47 of the Planning Act 2008.

1.5.3 To learn about our proposals:

- Read this Consultation Overview Document (or the **Consultation Summary Document**)
- View hard copies of the consultation documents at our deposit locations (all in public places) (see Table 1.1 for locations)
- Visit our website and virtual exhibition (which includes a 3D model of the Project) at **www.gatwickairport.com/futureplans**
- Book a Telephone Surgery (by visiting our website or calling the hotline) to speak to an expert
- Visit our Mobile Project Office (see Table 1.2 for locations)
- Call our freephone hotline **0800 038 3486** to speak to someone Monday to Friday, 9.30am to 5.30pm
- Send us an email to **info@gatwickfutureplans.com**
- Follow us on Facebook, Instagram, LinkedIn and Twitter

1.5.4 All consultation documents will be available to download from our website, and on USB drives which will be provided free of charge for personal use on request. We will also provide hard copies of the Consultation Summary Document and Consultation Questionnaire free of charge. We will review requests for hard copies of the other documents on a case-by-case basis. A fee to cover printing costs (up to a maximum of £500 for one full set of consultation documents) may be charged to the recipient.

1.5.5 For community members without broadband/computer access or who are unable to travel to view hard copies of the documents, we will loan (on request and for a limited period) tablets loaded with all consultation information.

1.5.6 Comments must be received by 11:59pm on 1st December 2021 and can be submitted as follows:

- Complete the online consultation questionnaire on our website **gatwickairport.com/futureplans**
- Email your comments to: **feedback@gatwickfutureplans.com**
- Call **0800 038 3486** to speak to someone Monday to Friday, 9.30am to 5.30pm
- Post your written response to (no stamp required) – **FREEPOST RTRB-LUUJ-AGBY**
- Completing a hard copy questionnaire and return it using the freepost address – **FREEPOST RTRB-LUUJ-AGBY**

1.5.7 To help you identify where there is a question relating to a topic in the questionnaire, you will see this logo appear in this document:

1.6 Scope of Consultation

1.6.1 Your comments will be considered in formulating our application for development consent. As part of this consultation, we are particularly seeking your views on the following matters:

- Why we think Gatwick Airport needs to grow;
- The planned development to enable growth to around 75.6mppa in 2038 and 80.2mppa in 2047;
- Our proposed airfield, terminal and supporting infrastructure;
- Our proposals for surface access improvements;
- Our construction schedule and programme;
- The findings of our preliminary environmental assessment information;
- How we will manage and mitigate the effects of construction;
- How we will manage and mitigate the effects of growth; and
- The benefits of expansion.

1.6.2 The following areas are not in the scope of this consultation:

- **Airport regulation and economic licensing** – Gatwick is licensed to operate by the Civil Aviation Authority (CAA). At airports, the CAA regulates airspace policy, safety, consumer protection and economics, such as service levels and charges to our airline customers; and
- **Modernising of airspace** – our Project does not require an airspace change. Future Airspace Strategy Implementation South (FASI-South) is a major review proposing to re-design airspace over London and the South East to improve services, and to reduce delays and the effects of noise. This work is being undertaken by NATS in partnership with the Department for Transport (DfT) and the CAA and will be subject to their own consultation requirements.

Table 1.1 – Deposit Point Locations (correct at time of publication)

DEPOSIT LOCATIONS	OPENING TIMES *(correct at time of publication)* MON	TUE	WED	THU	FRI	SAT	SUN
Crowborough Community Centre, Pine Grove, Crowborough, TN6 1FE	8am - 1pm						⊗
Uckfield Library, Library Way, High Street, Uckfield, TN22 1AR	10am - 1pm	10am - 4.30pm	2pm - 4.30pm	10am - 6pm	10am - 4.30pm		⊗
Tunbridge Wells Library, Level 1, Royal Victoria Place Shopping Centre, Tunbridge Wells TN1 2SS	9am - 6pm					9am - 5pm	10.30am - 4pm
Edenbridge Library, The Eden Centre, Four Elms Road, Edenbridge, TN8 6BY	9am - 1pm	9am - 5pm			1pm - 5pm	10am - 3pm	⊗
Dorking Library, St Martin's Walk, Dorking, RH4 1UT	9.30am - 5.30pm					9.30am - 5pm	⊗
Leatherhead Library, The Mansion, 68 Church Street, Leatherhead, KT22 8DP	⊗	9.30am - 5pm					⊗
Reigate and Banstead Town Hall, Castlefield Road, Reigate, Surrey, RH2 0SH	8.45am - 5pm				8.45am - 4.45pm	⊗	⊗
Horley Library, 55-57 Russell Square, Victoria Road, Horley, RH6 7QH	⊗	9.30am - 5pm					⊗
Oxted Library, 12 Gresham Road, Oxted, RH8 0BQ	⊗	9.30am - 5pm					⊗
Caterham Valley Library, Stafford Road, Caterham, Surrey, CR3 6JG	⊗	9.30am - 5pm					⊗
Crawley Library, Southgate Avenue, Crawley, RH10 6HG	9am - 6pm					9am - 5pm	⊗
Broadfield Library, 46 Broadfield Place, Crawley, RH11 9BA	10am - 5pm					10am - 2pm	⊗
Horsham Library, Lower Tanbridge Way, Horsham, RH12 1PJ	9am - 6pm					9am - 5pm	⊗
Billingshurst Library, Mill Lane, Billingshurst, RH14 9JZ	10am - 5pm					10am - 2pm	⊗
Mid Sussex District Council, Oaklands, Oaklands Road, Haywards Heath, RH16 1SS	8.45am - 5.15pm				8.45am - 4.15pm	⊗	⊗
East Grinstead Library, 32 - 40 West Street, East Grinstead, RH19 4SR	9.30am - 6pm					9.30am - 5pm	⊗
Jubilee Library, Jubilee Street, Brighton, BN1 1GE	10am - 5pm						11am - 5pm
Westdene Library, 24 Bankside, Brighton, BN1 5GN	9am – 5pm					9.30am - 5pm	11am - 5pm

Table 1.2 – Mobile Project Office Locations (correct at time of publication)[7]

MOBILE PROJECT OFFICE LOCATIONS		
DATE	**TIME**	**LOCATION**
17 Sept	9:30am - 12:30pm	Crawley, K2 Leisure Centre, Pease Pottage Hill, Crawley, RH11 9BQ
	2pm - 5pm	Horsham, The Bridges Leisure Centre, Wickhurst Lane, Broadbridge Heath, Horsham, West Sussex, RH12 3YS
23 Sept	9:30am - 12:30pm	East Grinstead, Sainsburys, Brooklands Way, East Grinstead, RH19 1DD
	2pm - 5pm	Edenbridge, Edenbridge Leisure Centre, Stangrove Park, Edenbridge, TN8 5LU
24 Sept	9:30am - 12:30pm	Horley, Horley Leisure Centre, Anderson Way, Horley, RH6 8SP
	2pm - 5pm	Lingfield, Lingfield and Dormansland Community Centre, Lingfield High St, RH7 6AB
28 Sept	9:30am - 12:30pm	Caterham, Morrisons, 28 Church Walk, Caterham, CR3 6RT
	2pm - 5pm	Oxted, Morrisons, 43 East Hill, Oxted, RH8 9AE
30 Sept	9:30am - 12:30pm	Reigate, Morrisons, 22-32 Bell Street, Reigate, RH2 7BA
	2pm - 5pm	Dorking, Dorking Sports Centre, Reigate Road, Dorking, RH4 1SN
02 Oct	9:30am - 12:30pm	Horsham, The Bridges Leisure Centre, Wickhurst Lane, Broadbridge Heath, Horsham, West Sussex, RH12 3YS
	2pm - 5pm	Crawley, Sainsburys, Crawley Avenue, Crawley RH10 8NF
05 Oct	2pm - 5pm	Capel, Capel Parish Hall, Dorking, RH5 5LD
	6pm - 8pm	Billingshurst, Billingshurst Centre, Roman Way, Billingshurst, RH14 9EW
06 Oct	9:30am - 12:30pm	Edenbridge, Frantfield, 14 Frantfield, EdenbridgeTN8 5BB
	2pm - 5pm	Royal Tunbridge Wells, Sainsbury's, Linden Park Rd, Royal Tunbridge Wells, TN2 5QL
07 Oct	2pm - 5pm	Brighton, Asda Brighton Hollingbury Superstore, Unit 1 Crowhurst Road, off Carden Avenue Brighton, BN1 8AS
12 Oct	2pm - 5pm	Haywards Heath, Ashenground Community Centre, Southdown Close, Haywards Heath, RH16 4JR
	6pm - 8pm	Uckfield, The Uckfield Club, Bell Lane, Bellbrook Industrial Estate, Uckfield, TN22 1QL
14 Oct	9:30am-12:30pm	East Grinstead, Sainsbury's, Brooklands Way, East Grinstead, RH19 1DD
	2pm - 5pm	Redhill, Sainsbury's, London Road, Redhill, RH1 1NN
16 Oct	9:30am - 12:30pm	Burgess Hill, Market Place Shopping Centre, Burgess Hill, RH15 9NP
	2pm - 5pm	Crowborough, Croft Road Car Park, Crowborough, TN6 1DL
19 Oct	9:30am - 12:30pm	East Grinstead, Sainsbury's, Brooklands Way, East Grinstead, RH19 1DD
	2pm - 5pm	Crawley, K2 Leisure Centre, Pease Pottage Hill, Crawley, RH11 9BQ
21 Oct	2pm - 5pm	Horley, Horley Town Council, 92 Albert Road, Horley, RH6 7HZ
	6pm - 8pm	Horsham, The Bridges Leisure Centre, Wickhurst Lane, Broadbridge Heath, Horsham, West Sussex, RH12 3YS
05 Nov	9:30am - 12:30pm	Royal Tunbridge Wells, Sainsbury's, Linden Park Road, Royal Tunbridge Wells, TN2 5QL
	2pm - 5pm	Edenbridge, Frantfield, 14 Frantfield, Edenbridge, TN8 5BB
12 Nov	2pm - 5pm	Brighton, Asda Brighton Hollingbury Superstore, Unit 1 Crowhurst Road, off Carden Avenue Brighton, BN1 8AS
13 Nov	2pm - 5pm	Horley, Horley Town Council, 92 Albert Road, Horley, RH6 7HZ

1.7 Next Steps

1.7.1 Following pre-application consultation, we will consider all responses and feedback received and use it to inform the further development of our plans and environmental assessments. We will then make an application for a Development Consent Order (DCO) for the Project to the Planning Inspectorate. The application will be accompanied by an Environmental Statement. The Planning Inspectorate will process and examine the application, including encouraging the submission of views from interested parties, before making a recommendation to the Secretary of State for Transport who will make the final decision on whether or not to grant consent.

[7] These dates and venues may be subject to change for reasons outside of our control. Please visit our website (www.gatwickairport.com/futureplans) which will be kept up to date with any changes to venues or times.

2 Gatwick Today

2.1 Introduction

2.1.1 In this chapter we provide information about how Gatwick operates and the airport's existing infrastruture and facilities. We then describe how we expect our growth to continue post-COVID but without the Northern Runway Project.

2.2 Existing Facilities and Infrastructure

2.2.1 Gatwick Airport is located between the towns of Crawley and Horley and approximately 25 miles south of central London.

2.2.2 The operation at Gatwick Airport is served by a single main runway and two terminals: North and South Terminals. When the main runway is unavailable, for example when it is undergoing maintenance work, the existing northern (standby) runway is used.

2.2.3 Pre-Covid, Gatwick was a major economic driver supporting over 135,000 jobs nationally in 2019 and making a contribution of £8.3bn to the UK economy every year.

2.2.4 The airport boundary is defined by the land which is owned by GAL. It also includes some additional parcels of land which are not GAL-owned (or are GAL-owned but subject to long-term lease agreements) but these are still surrounded by or adjacent to GAL-owned land.

2.2.5 Gatwick has excellent surface transport links. The airport's two passenger terminals are directly served by the M23 motorway spur off the M23, which runs approximately 1.7 km to the east of the airport. The A23 (London Road) also serves the airport.

2.2.6 Gatwick also has its own dedicated railway station on the London to Brighton mainline railway. Gatwick has the largest rail catchment of any UK airport. Serving over 20 million rail journeys a year, it connects to more stations than any other European airport and is the busiest railway station in the South East, outside central London's main terminals. Nearly 15 million people – more than a quarter of the population of England - can access Gatwick by road or rail within 60 minutes. With 42% of our passengers using the train for their trips to and from Gatwick, we are proud to facilitate the highest percentage of passengers travelling by train of any major UK airport.

2.2.7 Gatwick's railway station is located at the South Terminal, where there is also a direct transit link from the railway station to the North Terminal via an automatic tracked transit system. Both terminals provide access to local and regional bus and coach services.

2.2.8 Gatwick's airfield extends over an area of 230ha. This is approaching one third of the total land within the airport boundary, comprising the main and northern runways, numerous taxiways providing the ability for aircraft to move around the airfield, navigational and landing aids, and the extensive grass areas surrounding these facilities.

2.2.9 Gatwick's apron area currently extends to 160ha and comprises:

- aircraft parking stands;
- taxiways;
- fuel farm;

- piers; and
- support facilities (fire station, control tower, etc).

2.2.10 Gatwick's two passenger terminals offer the main passenger services such as check-in, security and baggage facilities, as well as offices, shops, restaurants, and welfare facilities.

2.2.11 The two terminals are served by six piers from which passengers embark and disembark aircraft (Piers 1, 2 and 3 at South Terminal and Piers 4, 5 and 6 at North Terminal).

2.2.12 Gatwick's Cargo Centre covers some 10ha and comprises cargo sheds, office accommodation, areas for HGV loading, unloading and parking, and open equipment parking areas. The cargo sheds are owned by a third party with a long-term ground lease.

2.2.13 There are four aircraft maintenance hangars - a British Airways operated hangar to the south of the runway, and three hangars to the north of the runway, operated by Virgin Atlantic, easyJet and Boeing.

2.2.14 The airport includes many ancillary buildings and facilities which accommodate services needed to support the airport operation. These include:

- air traffic control tower
- vehicle and equipment engineering, storage and maintenance facilities;
- numerous hotels and offices;
- waste management facility;
- passenger and staff car parks;
- contractors' compounds;
- filling stations; and
- police station.

Figure 2.1 : Gatwick Airport Aerial View

2.3 Ownership and Regulation

2.3.1 In May 2019, a new long-term partnership was formed between VINCI Airports and Global Infrastructure Partners (GIP) with VINCI Airports purchasing a 50.01% stake in the airport. This partnership sees Gatwick integrate into the network of VINCI Airports, one of the leading private airport operators in the world, which manages the development and operation of 46 airports across the globe. Served by around 250 airlines, VINCI Airports' network handled 195.2 million passengers in 2018. VINCI Airports develops, finances, builds and operates airports, leveraging its investment capability, international network and know-how to optimise performance of existing airport infrastructure, facility expanions and new-build construction projects.

2.3.2 Global Infrastructure Partners (GIP), which manages the remaining 49.99% interest in Gatwick, is an independent infrastructure investor that makes equity investments in high quality infrastructure assets in the energy, transport and water/waste sectors.

2.3.3 GAL is the company licensed to operate Gatwick Airport by the Civil Aviation Authority (CAA). Since April 2014, Gatwick has been regulated under an Economic Regulation Licence issued by CAA where our service levels and charges are agreed with our airline customers in a set of commitments which are then endorsed by the CAA. The commitments are a set of legally enforceable undertakings made by GAL to our airlines covering price, service, investment, financial resilience, operational resilience and dispute resolution. They determine what we can charge our customers for providing core services and also establish quality standards for those services, including security queue times, availability of escalators and lifts, and passenger satisfaction scores. Every month we publish a report on how we are performing against this set of standards.

2.4 Current Operations

2.4.1 Gatwick is operational 24-hours a day, 365 days a year.

Passenger Numbers, Air Traffic Movements and Recent Growth

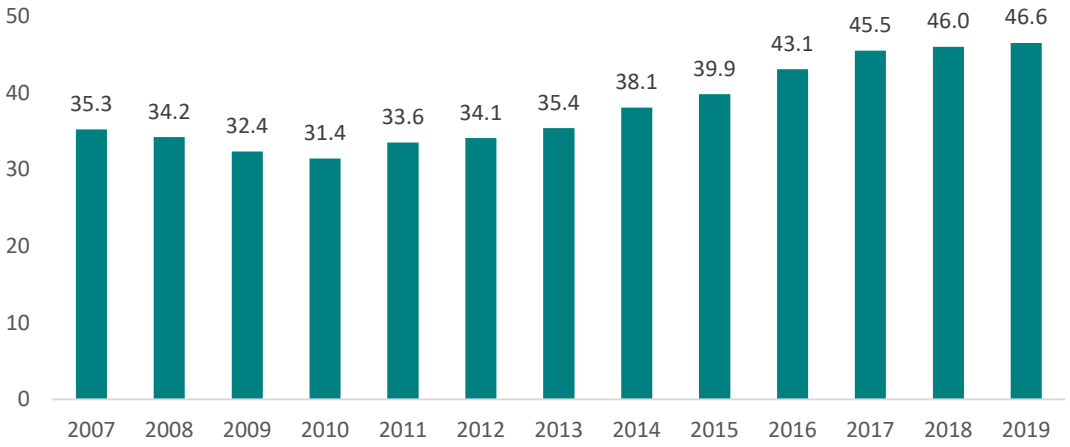
2.4.2 In 2019, Gatwick Airport handled some 283,000 commercial Air Transport Movements (ATMs), serving over 46.6m passengers travelling to 228 destinations with 53 different airlines. Until 2017, Gatwick had the world's busiest single runway (55 aircraft movements per hour), and still has the world's busiest single runway operation during the day.[8]

2.4.3 Despite operating with a high degree of slot constraint, Gatwick has still been able to provide significant levels of growth in the recent years before the COVID-19 pandemic. Over the last decade to 2019, Gatwick has grown by over 14 million passengers. This 44% growth in passengers resulted from 15% growth of ATMs.

2.4.4 Recent growth in passenger and ATMs is shown in the graphs below (Figures 2.2 and 2.3):

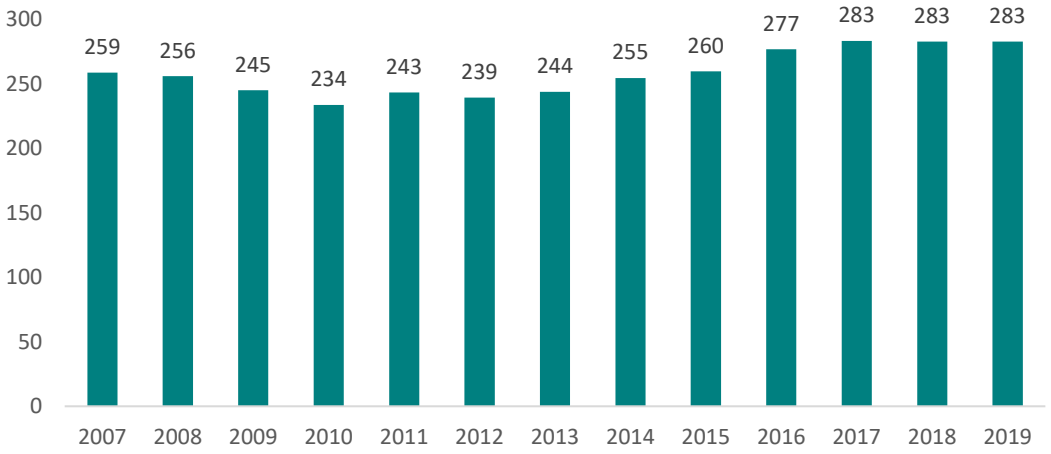
[8] In 2018, Mumbai International Airport created a new world record for single-runway operations handling 980 arrivals and takeoffs in 24 hours

Figure 2.2 – Gatwick Airport Passengers (m)



Source : CAA Statistics

Figure 2.3 – Gatwick Airport Air Traffic Movements (ATMs) (000s)



Source : CAA Statistics

What has driven recent growth at Gatwick?

2.4.5 Growth in the past 10 years has been driven by three main factors:

1. **More passengers per flight:** Average passengers per ATM have grown from 132 in 2009 to 165 in 2019. This has been 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.
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 so we see further potential for this peak spreading to continue.

3. **Growth in peak runway capacity:** The maximum number of scheduled aircraft movements that can be accommodated on our 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.

2.4.6 Recent growth at Gatwick has also been driven by other factors as follows:

Managing Demand for Slots

2.4.7 Compared to Luton and Stansted, Gatwick is by far the most 'oversubscribed' airport for applications by airlines for take off and landing slots (see Figure 2.4 below):

2.4.8 Luton's slot requests fit within its available capacity, whilst Stansted's fit with a few exceptions during the peak hours. However, Gatwick's slot requests exceed the capacity in virtually all hours of the day. This limits our growth such that over the last couple of years, growth has mainly only been able to occur through peak spreading (better use of quieter off-peak periods) and larger/fuller aircraft. Whereas Gatwick's peak month movements have not been able to grow, those of Stansted and Luton have grown 13% and 9% respectively.[9]

Secondary Slot Market

2.4.9 Historically, it is only Heathrow that has had an established secondary market for slots and their average values have increased significantly over time. Recent trades for peak capacity have, for example, seen slot pairs 'valued' at up to $75m[10].

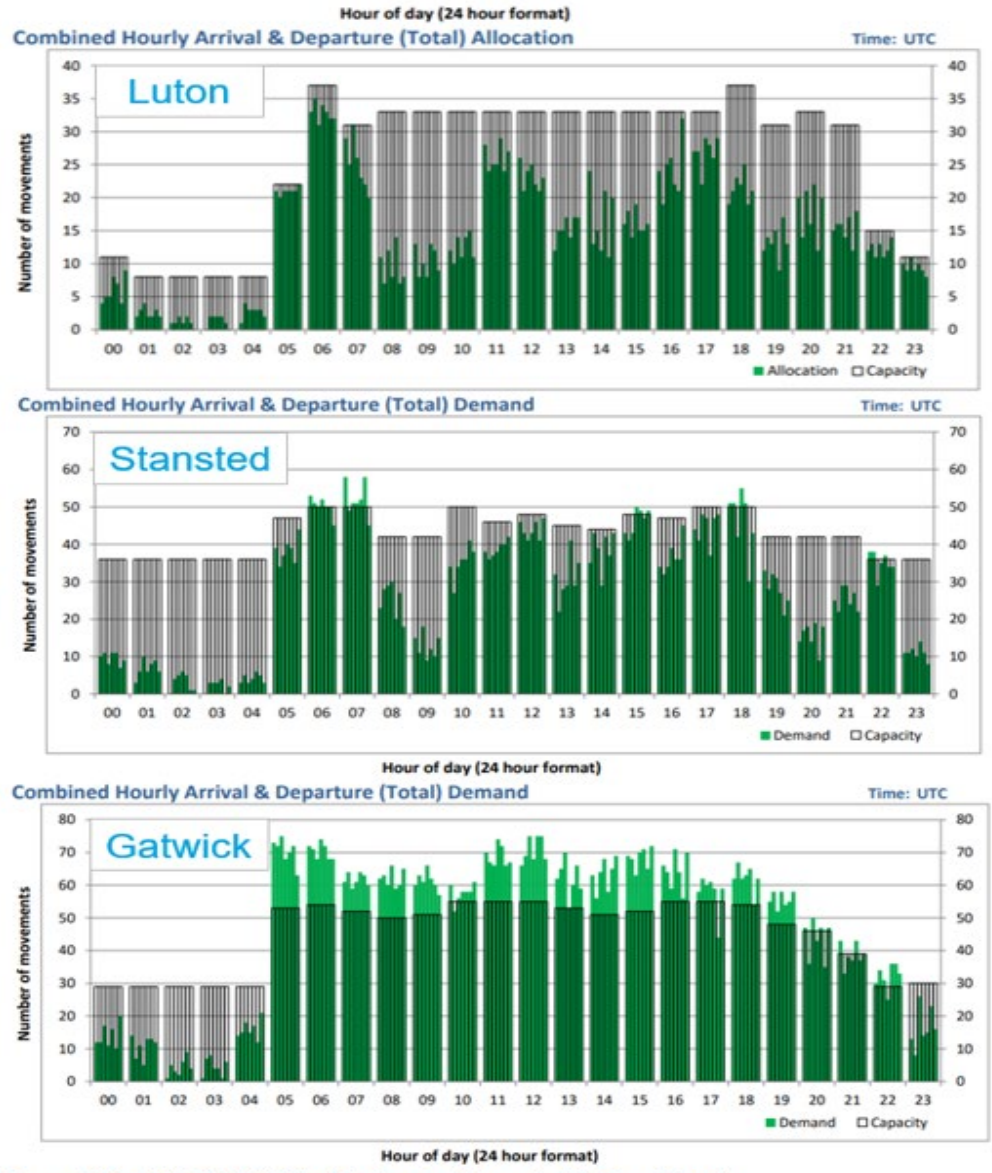
2.4.10 As Gatwick has become ever more constrained, a secondary market has now started to emerge. The first significant 'trade' occurred when Flybe sold most of their Gatwick slot portfolio to easyJet in 2012. 25 slot pairs were exchanged for an average of £0.8m per pair. In the last few years, the values attached to Gatwick slots have increased significantly, now valuing them at around £3m per pair based on a portfolio of slots.

2.4.11 For the recently available Thomas Cook slots at Gatwick, competition increased with interest from easyjet, Wizz Air, IAG, TUI and other reported bidders. This follows the Monarch slot portfolio receiving competition from a number of airlines following its insolvency in 2017.

2.4.12 Other London airports have only seen very modest levels of interest and value, for example Jet2 recently acquired Manchester, Birmingham and Stansted slots whilst Wizz acquired some Luton slots following the demise of Monarch.

[9] CAA Statistics, August data, 2016-19
[10] Oman Air price paid in 2016 for peak arrival slot pair

Figure 2.4 : Slot Application Summary (Summer 2020)



Source: ACL, S20 Initial Slot Allocation Reports (Demand), 30th Dec retrieved

Note: Green bars represent demand by airlines for slots (by day of the week Mon-Sun) requested at the annual slot conferences. Grey bars show the available capacity in the summer season

Destination Growth

2.4.13 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 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.

2.4.14 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%. This share mainly reflects 'mid-haul' markets (e.g. Israel) operated by a combination LCCs and full-service carriers.

2.4.15 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 'local' London 'origin and destination' demand (i.e. passengers with a 'true' origin or destination as London).

2.4.16 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).

2.4.17 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 0.4m passengers per year. Cathay Pacific have also chosen Gatwick to expand their London presence with the launch of services also in 2018.

Key carriers favouring Gatwick over other airports

2.4.18 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 the likes of Gatwick, Luton and Stansted with approximately 5m passengers at each airport.

2.4.19 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.

2.4.20 Gatwick now accounts for 63% of easyJet's London operation up from 32% in 2005. Some of this growth resulted from easyJet's purchase of the Thomas Cook slots following the insolvency proceedings.

Night Flights

2.4.21 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). This is set out in the in 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[11].

2.4.22 On average, Gatwick has 45-50 flights during the NQP in the summer, and 18-20 during the NQP in the winter.

2.4.23 Night flights are and play an important part of our airlines' operating models. They allow routes to be flown which would not otherwise be viable, for example by allowing aircraft to make several rotations every day – a vital way of ensuring the economic viability of the airlines' operations, particularly for low-cost operators.

Airlines and Destinations

2.4.24 Global air travel has been revolutionised over the last two decades 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 aircraft is allowing airlines to extend the low-cost model to a wide range of long-haul destinations.

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

2.4.26 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. Several of the largest European airline groups have also established low-cost brands, such as Eurowings for Lufthansa group.

2.4.27 In addition, demand remains 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 (China Eastern, WestJet) plus new airlines seeking to enter the Gatwick short-haul market (SunExpress, SAS, Alitalia) and long-haul (China Southern to China, Vistara to India and JetBlue to USA).

2.4.28 Gatwick continues to support and invest in the growth of both low-cost and full-service airline groups, operating across short-haul and long-haul routes, and we see this as key to our future ambition and continued success.

[11] 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

London Market

2.4.29 London is the biggest aviation market in the world in terms of passenger numbers. In 2018, the five main London airports handled 176m 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 on global commerce, tourism and international connectivity. 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.

2.4.30 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 help support a large route network, and we have successfully added new long-haul destinations such as Buenos Aires, Shanghai and Singapore to that network, contributing to the 1 in 5 long haul passengers we fly. We have the largest base for easyJet in Europe, who accounted for 19m passengers at Gatwick in 2019 and 41% of flights.

Passenger Catchment

2.4.31 Our proximity to London and transport links to the wider South East (and beyond) gives us a substantial catchment area. In our catchment and based on the current geographical location of population, the number of people living in 5 mile, 10 mile, 25 mile and 50 mile catchments from Gatwick is as follows:

- 170,000 people between 0 and 5 miles.
- 248,000 people between 5 and 10 miles, equivalent to 418,000 between 0 and 10 miles of the airport.
- 5.662 million people within 10 and 25 miles, equivalent to 5.910 million between 0 and 25 miles of the airport.
- 11.193 million people within 25 and 50 miles, equivalent to 16.855 million people within 0 and 50 miles of the airport.

2.4.32 When considering current journey times across all modes, the number of people between 0 and 4 hours from Gatwick is as follows:

- 494,000 people between 0 and 30 minutes.
- 4.259 million people between 30 and 60 minutes, equivalent to 4.75 million within 0 to 60 minutes from the airport.
- 8.831 million people between 60 and 90 minutes, equivalent to 13.584 million people within 0 and 90 minutes from the airport.
- 7.574 people within 90 and 120 minutes, equivalent to 21.158 million persons within 0 and 120 minutes of the airport.
- 25.538 million people within 120 and 240 minutes, equivalent to 46.696 million people within 0 to 120 minutes from the airport.

2.4.33 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 (Figure 2.5):

- York - 150 minutes compared with 189 minutes from Heathrow
- Leeds - less than 180 minutes compared with 201 minutes from Heathrow

2.4.34 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.

Figure 2.5 – Public Transport Travel Time to/from Gatwick Airport

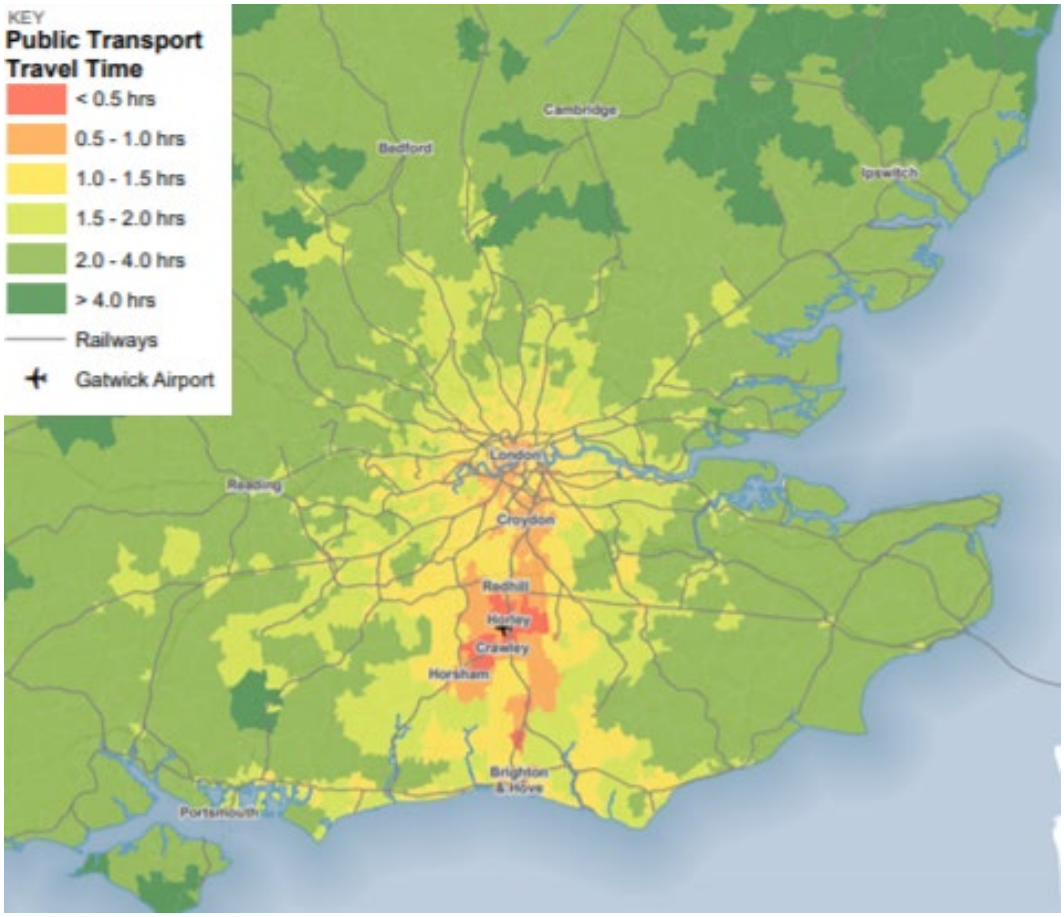


Figure 2.6 – Drive Time to/from Gatwick Airport

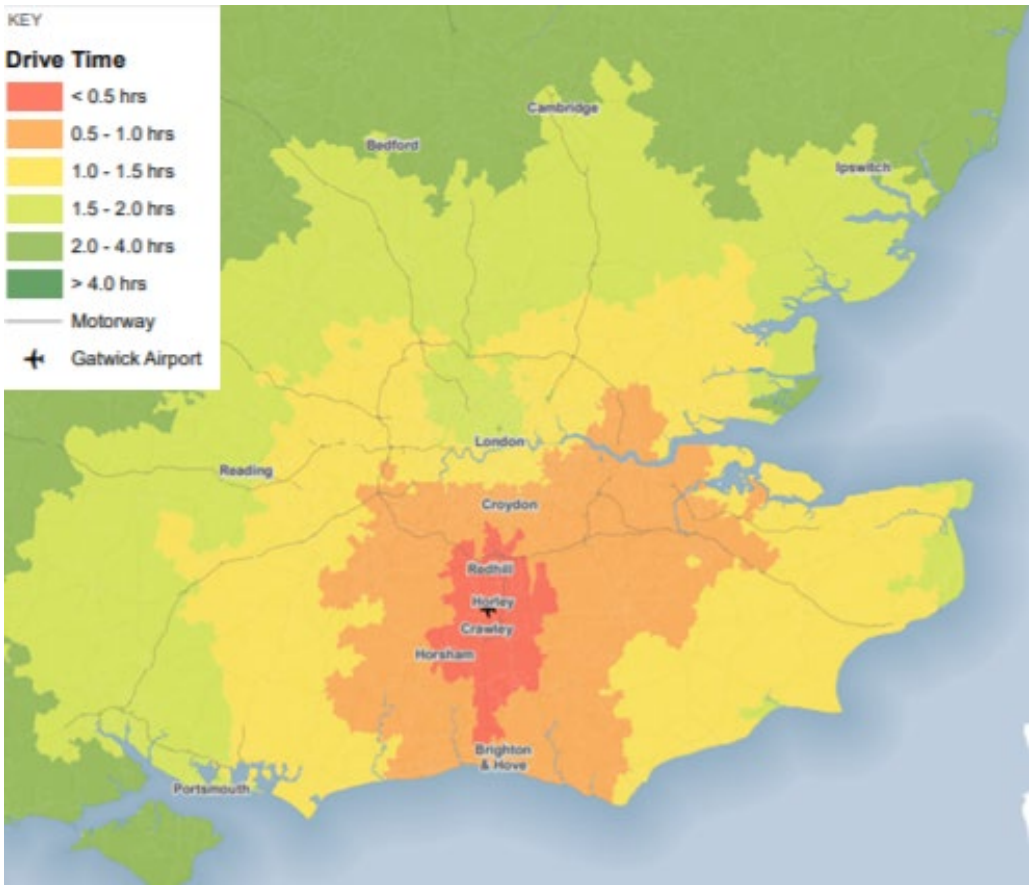
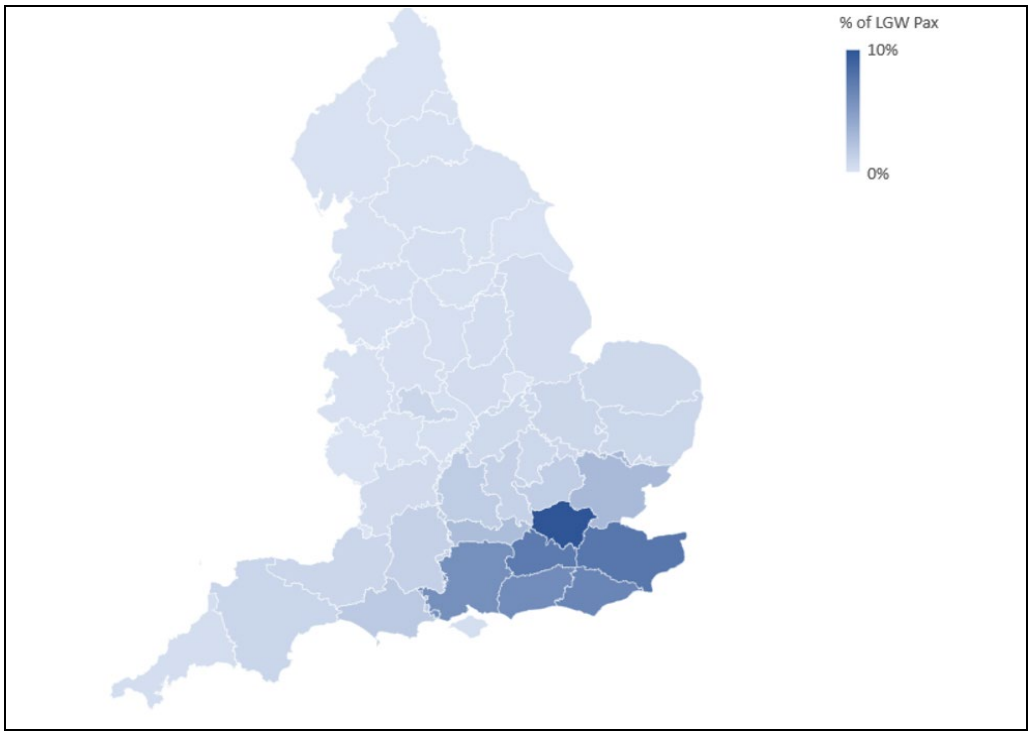


Figure 2.7 : Gatwick's Catchment



2.4.35 Geographically, Gatwick serves a mostly distinct catchment area when compared to Stansted, Luton and Southend and when compared to these airports, we have faster transport links to central London destinations.

Air Cargo

2.4.36 The supply side dynamics of the routes and carriers play a pivotal role in our cargo performance with long-haul widebody movements to markets such as Asia and the Middle East providing significant opportunity.

2.4.37 Our 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.

2.4.38 Published statistics for our 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. To ensure the application for development consent is based on accurate figures, we have undertaken a one-year validation exercise to identify the magnitude of this. 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).

2.5 Current Airport Capacity

2.5.1 The airport is not currently controlled by a 'limit' on the total number of passengers, or the number of ATMs that are permitted each year.

2.5.2 Today, Gatwick can handle 55 scheduled aircraft movements an hour on its main runway. This has grown from 53 an hour in 2012. This increase has allowed more flights, including during the busy summer period. In peak summer months (July, August, September) Gatwick is already operating with little or no spare capacity.

2.5.3 Demand for landing and take-off slots, especially in the peak summer period is heavily overscubscribed and an active secondary slot market has now emerged. This means that additional capacity that is made available is rapidly taken up by airlines.

2.5.4 When permission was granted for the North Terminal in 1978, restrictions were placed on the use of the northern (referred to as the 'emergency runway') by a legal agreement and a planning condition. These prevented operating both runways at the same time. The legal agreement expired in August 2019 but the operating restriction is still in place because the planning condition still remains and requires to be removed as part of the DCO application.

Growth without the Northern Runway Project

2.5.5 Even without the Northern Runway Project (what we call the 'Baseline Case'), we will continue to experience growth in passengers and ATMs. The Baseline Case assumes continued use of Gatwick's existing main runway. Growth will firstly come from demand across our core and wider catchment which is forecast to grow in line with wider UK aviation projections of around 1.7% in the long term. Secondly, the ongoing supply side trends including larger and fuller aircraft and making better use of the runway will continue to deliver increased annual throughput.

2.5.6 Without the Northern Runway project, we estimate that by 2038 we will be able to handle some 318,000 ATMs reflecting an increase of around 10% compared to 2019 throughput. This increase in movements will be achieved through better year-round slot utilisation and further capacity release, whilst up-gauging (the use of larger aircraft) and load factor growth will also support 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 traffic. Beyond 2038 further modest growth is expected with approximately 326,000 annual ATMs assumed in 2047, reflecting modest improvements in capacity utilisation over the period. This increase in ATMs will facilitate growth in passenger numbers to some 62.4mppa in 2038 and 67.2mppa in 2047. This growth in the Baseline Case is anticipated to come from three main and well-established factors:

1. Growth in runway utilisation in off peak periods

In the busy summer months (July, August and September), Gatwick is often already operating at or close to its peak capacity. Without the Northern Runway Project, Gatwick is anticipating only modest growth during this period as daily ATMs are forecast to increase by 4% from an average of 900 in 2019 to over 939 in 2038 and 946 in 2047.

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

In the less utilised winter period, daily ATMs are forecast to increase from an average of 666 in 2019 to 813 daily in 2038 and 842 by 2047. By 2038, this represents an increase of 22% versus 2019. For comparison, Gatwick's winter utilisation has increased by 15% since 2014 as daily ATMs have grown from 579 to 666.

The increases in runway utilisation during off peak periods will result in annual traffic profiles flattening as demand spreads to the less utilised periods of the year, although some seasonality would remain. In 2038, busy month ATMs are forecast to be 7% higher than the annual average compared to 17% in 2019 and 23% in 2014.

2. Up-gauging of fleet over time to larger aircraft

This reflects the trend for airlines to up-gauge their fleets with larger aircraft and more seats. Seats per ATM are expected to increase from an average of 192 in 2019 to 215 by 2038 and 224 in 2047.

3. Higher average load factors

This relates to a predicted increase in the average occupancy levels of flights. In 2019, average load factors range between of 78-92% (averaging 86%) across the year and have increased from 79% to 86% over the last 10 years. This increase has been supported by the growth of LCCs who have been actively increasing load factors across their networks.

Over the next twenty years, load factors are forecast to increase at a slower rate, with the gains seen in the last 10 years not being repeated in the next 15-20 years. By 2038 and beyond, average load factors are forecast to increase to just over 90% which is comparable to Gatwick's most efficient carriers operating today.

Currently Consented Projects and Projects under Construction

2.5.7 The following developments are currently consented or under construction and would proceed in the absence of the Project. These projects, together with other improvements such as internal alterations to the terminals, will ensure that the ATM and passenger growth in the Baseline Case can be accommodated:

- a western extension to Pier 6, increasing the number of pier-served stands from 11 to 17. As part of these works, limited changes to existing stands and alterations to Taxiway Quebec are required where these are located in the area of the proposed pier extension;
- provision of an additional rapid exit taxiway from the main runway, which will improve resilience of our operations;
- two new multi storey car parks – a 1,500-space car park at South Terminal (MSCP4) and a 2,750-space car park North Terminal (MSCP7);
- use of robotic technology within existing long-stay parking areas to increase capacity, resulting in an additional 2,500 spaces;
- proposed highway improvements include local widening on the junction entry/exit lanes for both the North Terminal and South Terminal roundabouts, together with signalisation of the roundabouts and provision of enhanced signage;
- improvements being undertaken by Network Rail to the Gatwick Railway Station which will almost double the size of the station concourse, provide additional lifts and escalators and improve access to the platforms. This project is scheduled to complete in 2024 prior to operation of the Project;
- extension to the existing BLOC hotel (200 additional bedrooms); and
- reconfiguration of the existing Hilton hotel to provide 50 additional bedrooms and additional guest parking.

2.5.8 In addition, normal or planned maintenance of existing facilities, including resurfacing of the main runway and replacement of navigational equipment, will continue.

Current Planning Status and Control

2.5.9 Gatwick Airport lies within the administrative areas of Crawley Borough Council and West Sussex County Council.

2.5.10 Local planning policies and proposals applicable to our existing airport operations are set out within a statutory Development Plan. This comprises the Crawley Local Plan 2030 (adopted in December 2015) together with the West Sussex Waste Local Plan (adopted April 2014) and West Sussex Joint Minerals Local Plan (adopted July 2018).

2.5.11 The Local Plan recognises the Airport's role and its importance as a key economic driver in the local and regional economy.

2.5.12 Within the airport boundary, the principle of development which promotes the safe and efficient operation of the airport is supported.

2.5.13 The policies seek to ensure sufficient and satisfactory safeguards are in place to mitigate the impact of the operation of the airport on the environment, including considerations relating to noise, air quality, flooding, surface access, visual impact and climate change.

2.5.14 Crawley Borough Council has also adopted a supplementary planning document (SPD) entitled

Development at Gatwick Airport (November 2008). The SPD provides guidance on the implementation of the Council's planning policies for the airport set out in the local plan.

2.5.15 In January 2021, Crawley Borough Council consulted on a review of its local plan, published as the draft Crawley Local Plan 2035.

2.5.16 The operation of Gatwick is also subject to a Section 106 Legal Agreement which the airport originally entered into with West Sussex County Council and Crawley Borough Council in 2001. The agreement reflects a shared desire to see the airport grow, with measures in place to minimise as far as possible the effects. The agreement has been refreshed and extended on a regular basis with the latest extension agreed until the end of 2021.

2.5.17 This agreement defines how Gatwick's operation, growth and environmental impacts will be managed responsibly and ensures that the Airport's wider sustainability strategy is aligned with our local authority partners. The agreement underpins the important relationship between the airport owners and the local authorities with responsibility for planning, environmental management and highways.

2.5.18 Performance against the Section 106 Agreement is reported in our Annual Monitoring Report published on the airport's website and is communicated to the Gatwick Airport Consultative Committee (GATCOM) – an independent committee in which the management of Gatwick interacts with the local community, the local authorities, passenger representatives, businesses, Local Economic Partnerships and other airport users.

2.6 Decade of Change – Gatwick's Sustainability Strategy

2.6.1 Our overarching vision for Gatwick is for it to be the airport of the future and a model for sustainable growth. We launched our first ten year 'Decade of Change' Sustainability Strategy in 2010. It set out our commitment to operate and develop Gatwick in a sustainable way, combining responsible environmental management with strong community programmes. We monitor and report on our performance every year and the latest annual report can be found here: https://www.gatwickairport.com/sustainabilityreport.

2.6.2 Our environmental successes over the last decade include the following:

- We were awarded the status of being the first carbon neutral London Airport in 2017;
- We were the first UK airport to achieve zero waste to landfill in 2018;
- We use 100% certified renewable energy to run the airport and have built a world-leading waste-processing plant;
- Our noise footprint has reduced by 48% over the last 20 years; and
- Since 2010, carbon emissions from our buildings and ground vehicles have reduced by 50%, potable water consumption by 25% and energy consumption by 12%.

2.6.3 We had ten action plans which contained our goals and the actions we were taking to deliver the Section 106 obligations and our 2010 Decade of Change Sustainability Policy. The action plans covered the following issues: air quality, biodiversity, carbon, community, energy, local economy, noise, surface access, waste, and water quality and consumption. Further information can be found at - https://www.gatwickairport.com/business-community/community-sustainability/sustainability/s106-agreement-and-action-plans/

2.6.4 In June 2021, we published our second Decade of Change Sustainability Policy to cover the period to 2030. The commitments contained in our new policy, which come under the themes of People and Communities, Net Zero Emissions and Local Environment, will be applied to our Project as it develops. Details of our new Decade of Change Sustainability Policy can be found here - https://www.gatwickairport.com/globalassets/company/sustainability/reports/2021/decade-of-change-policy-to-2030.pdf

2.7 Gatwick in the Community

2.7.1 As part of our approach to sustainable growth, we have developed a strong programme of community investment and we play a vital role in the regional economy, while working to address the social and environmental issues that matter to local people. In growing our airport, we want to continue to invest in our community through continued funding so that communities can benefit fully from the effects of our growth proposals. Full details are being developed but some of the key initiatives that we expect to continue include the following:

- **Gatwick Airport Community Trust** - Gatwick Airport Community Trust (GACT) is an independent charity set up by the Section 106 agreement between West Sussex County Council, Crawley Borough Council and Gatwick Airport.

  The Trust is dedicated to supporting local communities through the funding of projects within those communities most affected by the airport and our operations. Each year, we make an annual donation to the Trust in excess of £200,000. Between 2016 and 2021, £1.326m was donated (£2.266m between 2011 and 2021). Local community groups and charities can apply for grants for specific projects. In 2020, £228,651 was awarded in grants to different projects.

  The majority of grants ranged from £1,000 to £5,000 and beneficiaries ranged from scout groups and village halls to sports clubs, choirs, theatre groups, pre-schools, the elderly and people with disabilities.

- **Gatwick Foundation Fund** – 236 organisations and 105,000 local people have benefitted from our fund since its launch in 2016. Through our Foundation Fund, over £1m has been awarded to local projects and community groups since 2016. Our fund is managed in partnership with the Community Foundations for Kent, Surrey and Sussex. The projects supported by the Gatwick Foundation Fund are focused around four main areas:

  - Employment, training and skills - helping people to gain confidence through training and development of new skills.
  - Families - supporting families and children in need and projects which combat social isolation and disadvantage.
  - Widening horizons - supporting projects which provide young people with opportunities that they would not otherwise have and to help them to widen their experiences and aspirations.
  - Elderly people - improving access to facilities and reducing isolation for the older generation.

- **Gatwick Greenspace Partnership** – we work closely with Gatwick Greenspace, which benefits people, wildlife and the countryside. Gatwick Greenspace is one of the Sussex Wildlife Trust's Living Landscape projects and works across 200 square kilometres of countryside between Horsham, Crawley, Horley, Reigate and Dorking.

  Its aim is to inform, educate and involve a diverse range of people and work with local landowners including the Forestry Commission, the Wildlife Trusts and the Woodland Trust, plus local authorities to support them in managing their land more sustainably and in partnership with others.

  We have supported the Gatwick Greenspace Partnership with the introduction of an Assistant People and Wildlife Officer overseeing habitat management and coordinating volunteers who help maintain and improve the 75 hectares of woodland, grassland and wetland around the airport.

- **Sustainable Transport Fund –** the existing fund promotes initiatives that encourage the use by passengers and staff travelling overland to and from the Airport by modes of transport other than the private car and, with regard to staff travel, the encouragement and promotion of car sharing. It is a legal requirement which we are bound to. Funds are currently based on the sum of a monthly charge for each pass validated for entry to a staff car park operated by or on behalf of the airport and a levy on the total supply of spaces in public car parks operated or available for operation by or on behalf of the airport. Funds raised from staff and public car park spaces in 2017/18 was £1.527m.

- **Local Community Sponsorship** - we support local events and projects. Bringing local residents together gives us an opportunity to connect with our nearest neighbours. Prior to the Covid-19 pandemic, we valued being involved with and contributing towards local events and organisations such as Horsham District Year of Culture 2019; High Street Live at The Crawley Festival; Horley Carnival; Gatwick Fun Day; Crawley Community Awards; St Catherine's Hospice Midnight Walk; and London to Brighton Veteran Car Run.

- **Regional Sponsorship –** we also partner in a range of events and activities that align with our values and have a wider, regional participation. Some of the regional events and organisations we've supported include Croydon Legacy Youth Zone; the 'Miles without Stiles' programme to increase the number of accessible walking routes in the South Downs for wheelchair users, families with pushchairs and less agile walkers; SERV Sussex charity who provide night-time transportation of blood for NHS Hospitals in Sussex; and the South and South East in Bloom horticultural campaign.

- **Community Engagement –** we engage in a variety of ways to find out about what matters to people; and keep them up to date about airport issues. We also work with community groups and industry bodies on a range of issues of interest and concern.

  One of the ways we are able to participate in community debate is the Gatwick Airport Consultative Committee (GATCOM), the airport's formal consultative body. It has 32 committee members from groups across the region, representing a wide range of interests including civil aviation, passenger service, business development, tourism and environmental issues. GATCOM meets quarterly.

We also host regular engagement events for local community representatives, providing an opportunity to meet members of the Gatwick team to discuss the issues that are most important to local people. We also keep the community up to date with a newsletter.
We engage with three other key groups on airspace and noise matters, this includes the Noise and Track Monitoring Advisory Group (NaTMAG) and its subgroup the Gatwick Noise Monitoring Group (GNMG) along with the Noise Management Board (NMB).

- **Charity -** as well as supporting lots of local charities through the Gatwick Foundation Fund and the Trust, we are proud to partner with three local charities on a longer-term basis - Surrey and Sussex Healthcare NHS Trust (SASH); Kent, Surrey and Sussex Air Ambulance and our on-site charity Gatwick Travelcare.

Gatwick Airport Community Trust

3 Our Project Proposals

3.1 Introduction

3.1.1 This chapter describes our Northern Runway Project, including the supporting facilities and services that we would plan to build, in more detail. Our proposals are fully described in **Chapter 5 of the PEIR** and are illustrated on the **Land Use Masterplans** and **Phased Construction Plans** submitted with this consultation.

3.2 Approach to Defining the Proposals

3.2.1 In developing the design of our proposals, we have sought to achieve a number of goals, including to:

- make the best use of our existing runways and infrastructure to meet growing aviation demand, particularly in London and the South East, in accordance with national aviation policy;
- provide better operational performance for our passengers and airlines and improve resilience at our airport;
- design infrastructure that is capable of efficiently handling the predicted increase in passenger and aircraft throughputs, maintaining passenger and airline service standards and creating greater choice for our airlines and passengers;
- make efficient use of our land
- minimise and mitigate the environmental effects of our proposals, such as on noise, air pollution, carbon and other impacts on the natural environment, and seek opportunities to enhance these aspects where possible;
- phase the development of the project so that disruption to our neighbours and passengers is minimised; and
- develop the project largely within the current footprint of the airport and minimise disruption to our neighbours.

3.2.2 Our proposal for dual runway operations would mean the northern runway is used for departures and the main runway used for both arrivals and departures. There are other airports around the world that safely employ similar systems.

3.2.3 As we have explained in Chapter 2, even without the Project, Gatwick is forecast to see a growth in ATMs and passenger throughput from 46.6 million passengers per annum in 2019 to approximately 62.4 million passengers and 318,000 ATMs per annum by 2038 and 67.2mppa and 326,000 ATMs in 2047.

3.2.4 The Northern Runway Project will enable passenger throughput to be increased to approximately 75.6 million passengers with 382,000 ATMs in 2038, and around 80.2 million passengers with some 386,000 ATMs per annum in 2047. This represents an increase in capacity of approximately 13 million passengers per annum compared to the 2038 and 2047 future baseline scenarios.

Assessing Alternatives for Growth

3.2.5 The Airports National Policy Statement requires the assessment of alternatives for growth, by reference to The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) which require an assessment of "reasonable alternatives" to a proposed development, including an explanation of the main reasons for the option that has been chosen following that assessment.

3.2.6 We developed a two-stage appraisal process to help us identify our preferred proposals to support growth at Gatwick. In Stage One we considered our strategic growth options – to be used separately or in combination - and Stage Two looked at the appraisal of key areas of the development. Further details of the options appraisal can be found in **Chapter 3 of the PEIR**.

Growth Options for Gatwick (Stage One)

3.2.7 Prior to the Covid pandemic, Gatwick experienced a sustained period of growth over the previous 10 years. Government policy set out that the increased demand for air travel was to be met through a new runway at Heathrow and by other airports making best use of their existing runways, subject to the environmental effects being effectively managed. In light of this, we developed three scenarios for growth which we consulted on in 2018 in our draft Master Plan:

- **Scenario One**: Gatwick remains a single-runway operation using the existing main runway more intensely;
- **Scenario Two**: the existing northern runway is routinely used together with the main runway; and
- **Scenario Three**: Gatwick continues to safeguard land for an additional runway to the south.

3.2.8 Over 5,000 consultation responses were received on our draft Master Plan including detailed comments relating to the three growth scenarios we presented within the plan.

3.2.9 We carefully considered both the consultation feedback and current and emerging national aviation policies and published our final Master Plan in July 2019[12].

3.2.10 Of the three scenarios, we concluded that Scenario One would restrict the airport's operations, our future growth and Gatwick's ability to contribute to meeting future demand for increased aviation capacity in the South East of England. We are not actively pursuing Scenario 3 in light of the Government's support for the third runway at Heathrow, but consider that it is in the national interest for the land to continue to be safeguarded to allow for a new runway to be constructed to the south of the airport, should future Government policy support this.

3.2.11 We are now progressing Scenario Two – bringing the existing northern runway into routine use – as there are significant advantages and benefits to this approach (as set out in Chapter 6).

3.2.12 After publishing our decision in the final Master Plan, we began work to evaluate the technical requirements of our proposals using an appraisal process (we called this Stage Two).

[12] https://www.gatwickairport.com/globalassets/business--community/growing-gatwick/gatwick-draft-master-plan-final.pdf

Identifying Component Parts of Our Preferred Proposals (Stage Two)

3.2.13 An options appraisal for the design and layout of the various main components of the proposals has been undertaken to consider the feasibility and potential impacts of each of the component parts. The process aimed to assess each option for suitability, operational viability, cost and environmental effects. The following criteria have been used to identify appropriate options to be considered in the appraisal:

- each option should be genuinely possible to deliver (i.e. they must be a reasonable alternative);
- each option should consider potential implications for other components; and
- each option must consider the potential implications for the remainder of the airport not affected by the dual runways.

3.2.14 Using these criteria, a number of design and layout options were identified for each component part. Following the identification of the emerging preferred options for each of the components, further analysis was undertaken of how each option would work together and create a coherent set of proposals. For each category a scoring system was used to qualitatively assess each option using knowledge of the site and the surrounding area. The scoring system allowed us to take a consistent approach to each category.

3.2.15 After the appraisal process, the options identified as performing best against the criteria were taken forward to form part of the current design for our proposals.

3.2.16 A review of design and layout options was then undertaken through an iterative design process for the Project. This review has taken into account the following criteria:

- operational;
- business case;
- deliverability;
- planning;
- surface access;
- water;
- environment (ecology, heritage, soils, visual);
- community (noise, air quality, health, socio-economic); and
- land and property.

3.2.17 Our proposals will be developed and refined in the light of the feedback we receive during this public consultation and from our on-going environmental assessment studies. The final plans will then be published along with detailed plans and drawings as appropriate.

3.3 Project Description

3.3.1 The Northern Runway Project scheme is described below and is illustrated in the **Land Use Plans** submitted with the consultation. These include how the layout of the airport and its infrastructure, such as the terminals, taxiways and aircraft stands, the road system and car parks and other supporting facilities will change when dual runway operations commence in 2029 and on completion of the project in 2038. Chapter 4 in this document provides more details on our proposals for improving surface access. A full description of the project proposals can be found in **Chapter 5 of the PEIR** and are illustrated in **Figures 5.2.1 (a-h) in the PEIR**.

Alterations to the Existing Northern Runway

3.3.2 The existing northern runway is located to the north and parallel to the main runway. A non-instrument runway, it is approximately 2.6km in length and a minimum of 45m in width, plus runway shoulders. Currently used predominantly as a taxiway, the northern runway is only used as an operational runway when the main runway is unavailable, for example during periods of maintenance. In 2018, the northern runway was used for 3,543 air transport movements, and in 2019 it was used for 2,842 air transport movements.

3.3.3 The changes to the northern runway we are proposing to enable dual runway operations are:

- Building a 12m wide strip along the northern side of the runway so as to enable the repositioning of its centreline 12 metres further north to ensure a centre line separation of 210m between it and the main runway. This is required to meet European Aviation Safety Agency standards for closely spaced parallel runways;
- removal of the redundant 12m strip to the south of the altered northern runway; and
- resurfacing and provision of new markings for the 33m-wide section of retained existing runway together with the new 12m to the north.

3.3.4 The northern runway would retain a width of approximately 45 metres, with 7.5m wide shoulders.

Operating Two Runways Together

3.3.5 We have explained in Chapter 1 how the two runways would operate together. Because of the minimum 210m separation distance between the centrelines of the two runways they would be treated for the purposes of air traffic control as a single runway for departure-departure separation purposes.

3.3.6 Departing aircraft would be cleared for take-off only after an arrival has touched down on the main runway or whilst an arrival is at least two nautical miles from the runway. Aircraft taking off from the northern runway would be limited to a wingspan of 36 metres (typically Airbus 320 and Boeing 737 aircraft) while the main runway would continue to be used for arrivals and departures for aircraft of all sizes.

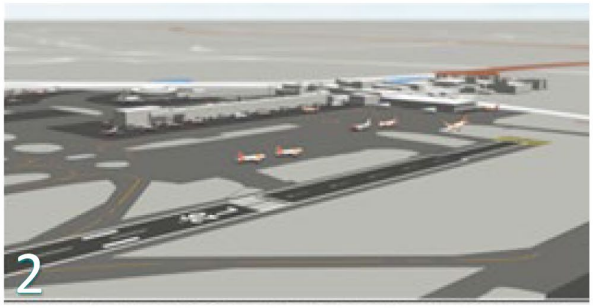
3.3.7 Arriving aircraft would continue to use the current approach to the main runway but would need to cross the northern runway (or its protected areas) after landing to reach the airport's terminals. If the flow of aircraft does not allow for the arriving flight to cross immediately, and the aircraft is a Code C size or smaller, it would hold in a safe location on the exit taxiways that are proposed between the two runways. If the northern runway is not clear to cross, larger aircraft will use the end-around-taxiways (EATs) to reach the terminal.

3.3.8 We anticipate that an enhanced instrument landing system (eILS) would replace the current instrument landing system (ILS) transmitters. With all arrivals continuing to use the main runway, our proposals assume that arrival-arrival separation rules will not change.

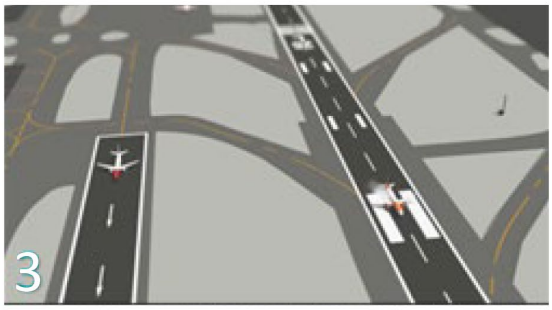
3.3.9 The take-off and landing process for operating both runways together are illustrated in Figure 3.1 below. A simulation video is also available on the consultation web site to show how the runways would operate together.

Figure 3.1 : Dual Runway Operations at Gatwick Airport

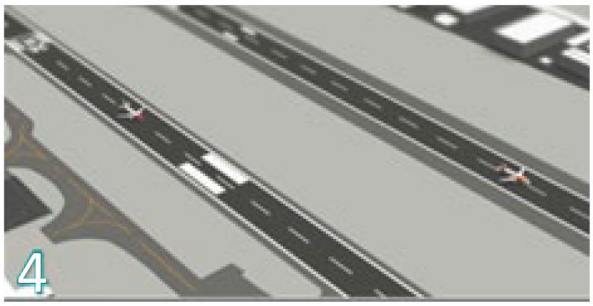
As an aircraft is on short finals for the southern runway, and aircraft is given a line-up and wait clearance on the northern runway.



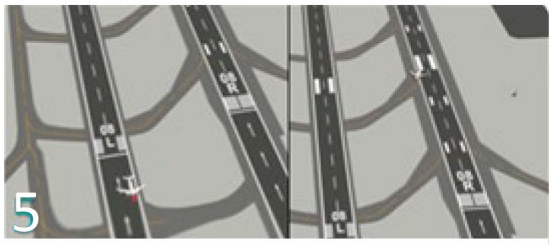
The aircraft on approach is given a landing clearance for the southern runway and a hold short instruction for the northern runway.



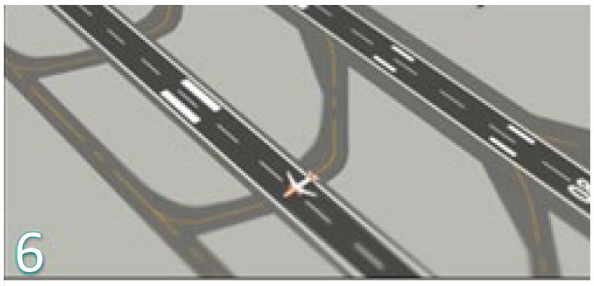
As the aircraft approaching the southern runway touches down, the second aircraft on the northern runway is given take-off clearance.



The departing aircraft on the northern runway starts its take-off roll whilst the arriving aircraft on the southern runway decelerates.



The departure on the northern runway lifts-off and starts to climb away and the arrival aircraft vacates the southern runway using one of the exit taxiways.



The arrival aircraft is instructed to cross the northern runway behind the departure aircraft that has climbed away.

Airspace Change Due to the Project

3.3.10 Airspace within the UK is regulated by the Civil Aviation Authority (CAA) and managed by NATS En Route (NERL), which is a subdivision within the National Air Traffic Services (NATS).

3.3.11 Work is being undertaken to review the airspace over London and the south east of England, with the aim of addressing existing constraints and allowing for future growth in air transport. This work is being undertaken by NATS, in partnership with the Department for Transport and the CAA and is known as the Future Airspace Strategy Implementation (FASI) South.

3.3.12 FASI South will be developed through an airspace change consultation in line with the CAA's airspace change process document (CAP1616 (CAA, 2021)). This process for the airspace around Gatwick Airport below 7,000 feet has just re-started (July 2021) but it will be some years

before the outcome is clear. The FASI South changes are not required in order to enable a dual runway operation at Gatwick.

3.3.13 In order to ascertain whether an airspace change is required to enable dual runway operations at Gatwick (with the realignment to the centreline of the northern runway), GAL submitted a Statement of Need within the scope of CAP 1616 to the CAA on 11 November 2019. The CAA issued CAP 1908 in May 2020, assigning the airspace change as Level 0 as the proposal would not alter traffic patterns (CAA, 2020). In December 2020, the CAA issued its decision (Decide Gateway): 'The CAA has completed the Decide Gateway Assessment and is satisfied that the change sponsor has met the requirements of the Airspace Change Process. The CAA approves the implementation of this airspace change proposal.' CAP 1908 notes that all physical works associated with the Northern Runway Project would be considered through the DCO consenting process.

Airfield Infrastructure

3.3.14 A number of changes are required to existing airfield infrastructure and facilities to support dual runway operations.

Reconfiguration of Taxiways

3.3.15 The existing taxiways would require amendment and realignment in order to accommodate the altered northern runway and to provide sufficient room for safe manoeuvring of aircraft associated with both runways in accordance with international standards. Redundant areas of hardstanding would be removed. The works required are described below.

3.3.16 The existing network of taxiways allows aircraft to move around the airfield and access the existing piers and stands where passengers embark and disembark.

3.3.17 The existing Taxiway Juliet provides a northern parallel taxiway to the north of the northern runway. In addition, the airfield includes:

- a network of taxiways to the north of Taxiway Juliet, providing the ability for aircraft to move around the airfield and access the existing piers, stands, Taxiway Juliet and the runways;
- exit taxiways between the main runway and the existing northern runway; and
- taxiways between Taxiway Juliet and the existing northern runway.

Taxiway Juliet

3.3.18 The existing taxiway Juliet would require an increased separation distance from the northern runway to allow aircraft to use this taxiway independently of northern runway operations. We are proposing to realign the western part of Taxiway Juliet approximately 27m to the north to allow for the movement of large aircraft (with a wingspan of 65-80m, such as the Boeing 747-8 or Airbus A-380-800) (Code F).

3.3.19 The eastern part of Taxiway Juliet between Taxiways Uniform and Sierra would be realigned approximately 19.5m to the north, allowing aircraft with a wingspan of 52-65m, such as the B777/B787 series or A330 (Code E) family to move along this section of taxiway independently of northern runway operations.

3.3.20 The eastern part of Taxiway Juliet between Taxiways Sierra and Quebec would be realigned approximately 5m to the north to allow for the movement of aircraft with a wingspan of 24-36m, such as the Boeing 737-700 or Airbus A-320 (Code C) independently of northern runway operations.

3.3.21 We are proposing a new spur – known as the Taxiway Juliet West Spur – to the north of the taxiway in order to provide a passing lane and allow air traffic control to effectively sequence aircraft for departure on the main and northern runways during easterly operations.

Aircraft Holding Area

3.3.22 We are proposing to reconfigure an existing apron and stands (known as the 130s/140s stands) to the north of Taxiway Juliet. The new configuration, the Charlie box, would provide operational hold points, allowing aircraft to be held just prior to accessing the northern runway to optimise runway efficiency and remove aircraft from busy taxiways. Occupying an area of approximately 15ha, the Charlie box would include new taxiways across the existing apron area, including:

- four routes for Code E aircraft linking Taxiway Kilo and the northern runway/Taxiway Alpha November
- an east-west route for Code C aircraft to allow independent access/egress from all positions
- two routes for Code C aircraft with a Code F taxi lane on Taxiway Kilo to link with taxiways Papa and Quebec and provide alternative routing for Code F aircraft to the runway

Taxiways Lima and Tango

3.3.23 We are proposing to modify the existing Taxiways Lima and Tango to create independence in routing to and from the northern runway for large aircraft. This would remove the need to move Taxiway Juliet further north along the entirety of its length.

3.3.24 Taxiway Lima would be extended westward towards the existing Taxiway Uniform to provide a suitable route for larger Code E and Code F aircraft. The extension would be 23m in width and approximately 300m in length.

3.3.25 An extension to Taxiway Tango would provide a cut-through northwards to meet the extended Taxiway Lima, creating a taxiway for Code E aircraft. The cut-through would be 23 metres in width and approximately 85 metres in length.

Taxiways Whiskey, Victor, and Zulu

3.3.26 Taxiways Whiskey, Victor and Zulu would require reconfiguration to accommodate Code E aircraft. This would largely be located within the area occupied by the existing taxiways but would require an additional area to the north of Taxiway Zulu to accommodate wider body aircraft.

Exit/Entrance Taxiways

3.3.27 Eight additional new runway exits/entrance taxiway are proposed between the northern runway and Taxiway Juliet to allow aircraft to move from the main and northern runways to Taxiway Juliet.

3.3.28 A further six new exit/entrance taxiways from the main runway would be required to allow arriving aircraft to be held before crossing the northern runway, under the direction of air traffic control. Six existing exit/entrance taxiways would be substantially removed, and one existing exit/entrance would be retained unchanged. The seven exit/entrance taxiways would connect the main and northern runways (five would operate when the runway operates as 26R i.e. during westerly operations) and two would operate when the runway operates as 08L (i.e. during easterly operations), while the eighth taxiway would provide an exit from the main runway to the end around taxiway west.

End Around Taxiways

3.3.29 Amendments are required to existing infrastructure in order to provide end around taxiways (at the end of both runways) to allow large aircraft to cross the end of the runway under the direction of air traffic control. In addition, they would provide a route for all aircraft in case of any issue preventing the use of exit taxiways.

3.3.30 The proposed end around taxiways would comprise:

- end around taxiway west - a new end around taxiway linking into the existing Taxiway Juliet to allow aircraft landing on the main runway to avoid affecting northern runway operations when aircraft are taking off from the northern runway in a westerly direction; and
- end around taxiway east (Taxiway Yankee) - a new exit taxiway would link into the existing Taxiway Yankee to form the end around taxiway east (Yankee). This would allow aircraft landing on the main runway to avoid affecting northern runway operations when aircraft are operating in an easterly direction.

Pier and Stand Amendments

3.3.31 As described earlier, there are currently six piers at Gatwick. Construction of a western extension to Pier 6, which serves North Terminal, is planned for implementation ahead of the NRP.

3.3.32 We are proposing a new remote pier ('Pier 7') to support passenger growth associated with the dual runway operations (shown on Figure 3.3). Located to the north west of Pier 6, adjacent to the existing cargo facility, Pier 7 would serve both North and South Terminals. The Pier would consist of a ground floor plus two levels (arrivals and departures), including departure gate areas, together with limited commercial facilities at the first floor level.

3.3.33 The apron to the south of Pier 7 would provide 23 new stand centrelines in total (14 Code C/9 Code E) (Figure 3.2).

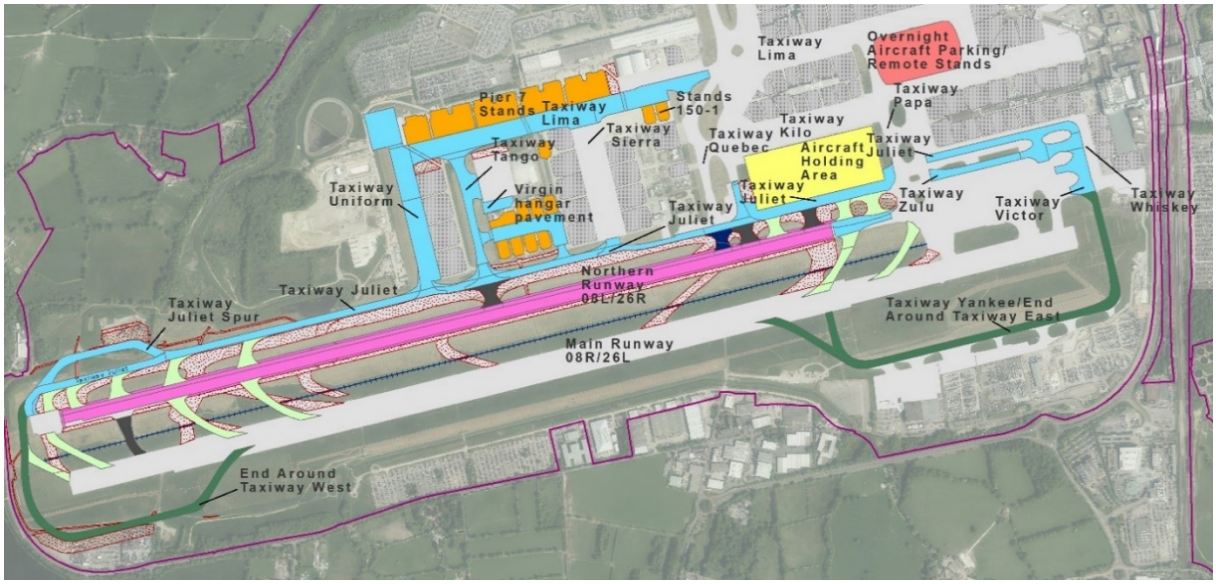
3.3.34 It is proposed that passengers reach the Pier using autonomous vehicles with appropriate stations for boarding or disembarking from these vehicles being provided at the North and South Terminals.

3.3.35 The pier and its apron (including new stands) would occupy an area of approximately 10.1ha, with a maximum building height of approximately 18m.

3.3.36 In addition to the new Pier 7, we are proposing other stand changes to improve our flexibility in handling different aircraft types, including (see Figure 3.2):

- provision of a new area of remote stands to be known as Oscar stands in the area to the north of Taxiway Juliet, between Taxiways Tango and Sierra;
- reconfiguration of existing areas of remote stands to allow for the reconfigured Taxiway Lima while retaining stands suitable for Code C aircraft;
- provision of additional intermediate hold stands;
- conversion of existing stands located to the west of Pier 3 to eight Code C fully serviced stands;
- provision of one new Code C stand north east of the existing Virgin hangar;
- removal and reduction of existing stands to allow for relocation of Taxiway Juliet East; and
- Provision of 14 new stands north of Taxiway Lima.

Figure 3.2 : Proposed Airfield Works



Extensions to North and South Terminals

3.3.37 We are proposing extensions to the existing North and South Terminals to accommodate the predicted passenger growth along with a number of changes within the terminals to allow for technology developments and to improve passenger experience and baggage handling (see Figure 3.3).

North Terminal

3.3.38 Changes to the North Terminal would include the following:

- an extension to the International Departure Lounge (IDL), to both the north and south of the current facility. The northern expansion would comprise three storeys (Levels 20, 30, and 40) to provide a mix of retail, catering and general circulation space. The extension would be up to approximately 32.5 metres in height (above ground level). The southern extension would be over levels 10, 20 and 30 and provide a mix of catering, retail and general circulation space. The extension would be up to approximately 27m in height (above ground level);

- a two-storey extension to the baggage sortation hall facility (providing baggage handling facilities). The extension would be up to approximately 12.5m in height (above ground level);
- an extension to baggage reclaim facilities, with a footprint of approximately 650m^2. The extension would be up to approximately 7m in height (above ground level);
- internal reconfiguration works to facilities such as check in zones, baggage systems, and security; and
- provision of a two-storey transition space to allow passengers to connect to the new autonomous vehicle facility providing connections to the new Pier 7.

South Terminal

3.3.39 Works to the South Terminal would include:

- an extension to the International Departure Lounge, over four storeys (Levels 10, 20, 30 and 40) to provide a mix of retail, catering and general circulation space. The extension would be up to approximately 30.5m in height (above ground level);
- internal reconfiguration works to facilities such as check in zones, baggage systems and security;
- provision of a two-storey transition space to allow passengers to connect to the new autonomous vehicle facility providing connections to the new Pier 7.
- Coaching gates to service remote stands.

Airport Supporting Facilities

3.3.40 A number of existing facilities on the airport, mainly located within the Oscar area (an area north of Taxiway Juliet), would need to be changed or relocated to accommodate the proposed changes to the northern runway and airport. These include the following (see Figure 3.3):

- Relocation of central airfield maintenance and recycling facilities;
- Relocation of fire training ground and provision of a satellite airport fire service provision;
- An additional hangar;
- Provision of perimeter boundary treatments to mitigate noise (e.g. noise walls and bunding); and
- Internal access routes and forecourts.

Motor Transport Facilities

3.3.41 The existing motor transport facilities need to be relocated to make way for new stands.

3.3.42 We are proposing to relocate the existing motor transport facilities from their current location to a new facility in the north western part of the airport.

3.3.43 The proposed replacement facility is likely to include a parts store, ramps, pits, tyre store, test area, workshop, heavy goods vehicle (HGV) refuelling area and vehicle wash area. The building(s) and compound would occupy an area of approximately 15,600m^2, with a maximum building height of 15 metres above ground level and could include elements up to 5m below ground level.

Grounds Maintenance Facilities

3.3.44 The existing grounds maintenance facilities would be relocated to an area of hardstanding in the south eastern part of the airport. New buildings would include an open vehicle storage shed, closed tool shed, hazardous substances unit and a portacabin style office/welfare area. A yard would be required with sufficient space to park and turn vehicles, together with a green compost area. This would be located within an area of approximately 1,230m^2, with a maximum building height of 8m.

Airfield Surface Transport Facilities

3.3.45 The existing Surface Transport facility would be relocated to an area of hardstanding in the south eastern part of the airport. New buildings would include open storage and vehicle sheds and a grit and salt store, together with a parking area. This would be located within an area of approximately 1,440m^2, with a maximum building height of 15m and could include elements up to approximately 5m below ground level.

Emergency Air Traffic Control Tower and Rendezvous Point North

3.3.46 The former/emergency air traffic control tower is currently located within the area to be known as Oscar, south of the existing Virgin hangar and to the west of the surface transport and grounds maintenance facility. This tower is proposed for demolition.

3.3.47 Due to the reconfiguration of the area to be known as Oscar, the existing Rendezvous Point North would require relocation in order to re-provide a suitable emergency rendezvous area, to the north of the central airport area, for off-airport emergency services.

Cargo

3.3.48 The existing cargo facility occupies an area of approximately 10 hectares, including 23,000m^2 of cargo sheds, with office accommodation and areas for HGV loading, unloading and parking. It is not currently used to its maximum potential efficiency.

3.3.49 The current facility has capacity to accommodate both existing and increased cargo throughput that the project is forecast to generate, although some internal operational changes within the facility are proposed to improve efficiency. These would not require changes to the external appearance, height or floor area of any of the existing buildings or structures.

Aircraft Engine Ground Running

3.3.50 Aircraft engine running for test and maintenance purposes currently takes place in a number of locations across the airport, some of which would be affected by the proposals to change current airfield facilities. New locations for engine ground running are proposed on Taxiway Juliet close to the areas currently used.

Fire Training Ground

3.3.51 Relocation of the existing fire training ground would be required to allow for the reconfiguration of the Taxiway Juliet (and spur). The fire training ground currently occupies an area of

approximately 13,050m^2 in the western part of the airfield, to the north of the existing northern runway. It includes a fire training rig, control centre, compartment fire training complex, road traffic collision mock-up area, classrooms, underground water storage, water tower and deluge system. The facility allows for rescue and firefighting training to ensure maintenance of competency and skills.

3.3.52 We are proposing to build a new fire training ground to the north of its existing location, occupying a consolidated area of approximately 12,000m^2. The maximum height of the rig is anticipated to be up to 25m, with tank depths of up to 5m.

Satellite Airport Fire Service Provision

3.3.53 To meet aerodrome certification requirements, a satellite Airport Fire Service facility to the south of the main runway may be required. The new facility would include hardstanding provision for a fire appliance with direct access to the taxiway system. This would be located within an area of approximately 8,000m^2, with a maximum built height of 15m.

Hangars

3.3.54 We anticipate a requirement to build a further aircraft maintenance hangar, to support dual runway operations. Sized for Code E aircraft, the proposed hangar would be located in the north western part of the airport, to the north of Larkins Road. The hangar would be within an area of approximately 12,440m^2 and would be up to 32m high and be close to the Boeing hangar that was opened in 2019.

3.3.55 In addition, the existing Virgin hangar in the north west part of the airport would be converted to an airside operation. This would require relocation of existing infrastructure from the north side of the hangar. Like-for-like facilities would be provided and the existing pavement on the northern side of the Virgin hangar could be re-provided on the southern side.

Perimeter Boundary Treatments to Mitigate Noise

3.3.56 We are proposing to remove an existing noise bund in the western end of the airfield which mitigates noise from taxiing aircraft to be replaced by either a new bund or noise barrier in this area which would extend over a longer distance and up to a maximum height of 10m.

Central Area Recycling Enclosure Facilities (CARE)

3.3.57 The existing Central Area Recycling Enclosure (CARE) facility is located to the north of Taxiway Juliet. Facilities include the existing waste processing building, biomass boiler, compound area and bin store.

3.3.58 We are proposing to relocate the current CARE facility to the north western part of the airport. The relocated CARE facility would process the majority of airport waste and is likely to include:

- a replacement/relocated biomass boiler to manage organic matter;
- an additional biomass boiler to manage organic matter;
- a materials recovery facility (MRF) to allow the sorting of recyclable materials and waste;
- card baling facilities;

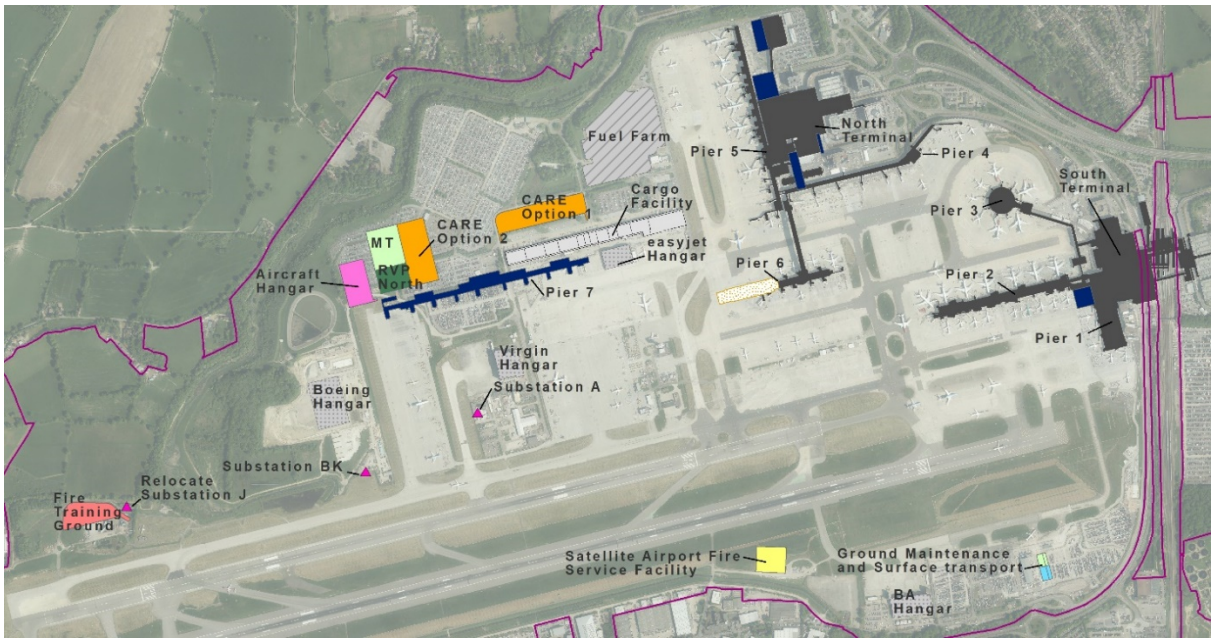
- vehicle weigh in/weigh out platform;
- ancillary office accommodation and welfare facilities; and
- hard standing area for recycling storage, quarantine area and manoeuvring area for supplier collection vehicles and vehicle movements.

3.3.59 The proposed CARE building would be located within a compound area of approximately 17,550m^2. The building would be up to 22m in height above ground level and could include elements up to 5m below ground level. The biomass boilers would be likely to require a flue that could be up to 50m above ground level.

3.3.60 We have identified two possible locations for the CARE facility, both located in the north western part of the airport (see Figure 3.3 below and **Figure 5.2.1a – Sheet 2 of the PEIR**) and would welcome your comments on which is preferred:

- **Option 1** - to the north of the cargo hall (north east of Pier 7); or
- **Option 2** - to the north west of Pier 7.

Figure 3.3: Proposed Airfield Works including locations of Option 1 & Option 2 CARE Relocations



Hotel and Office Facilities

3.3.61 To meet the predicted growth in passenger numbers and aircraft operations, we are proposing to provide for additional office and hotel facilities (see Figure 3.4).

Offices

3.3.62 In recent years passenger growth has occurred without the need for additional office provision. However, we are expecting that new office space would be required to meet the needs of airport companies as the airport grows. We are proposing new office accommodation on the location of the current car park H. The space allocated could provide for up to three new office blocks.

3.3.63 The office buildings would be up to approximately 27m high, with approximately 9,000m^2 of floor space. The exact configuration, phasing and amount of floorspace would be fixed as an when they were required.

Hotels

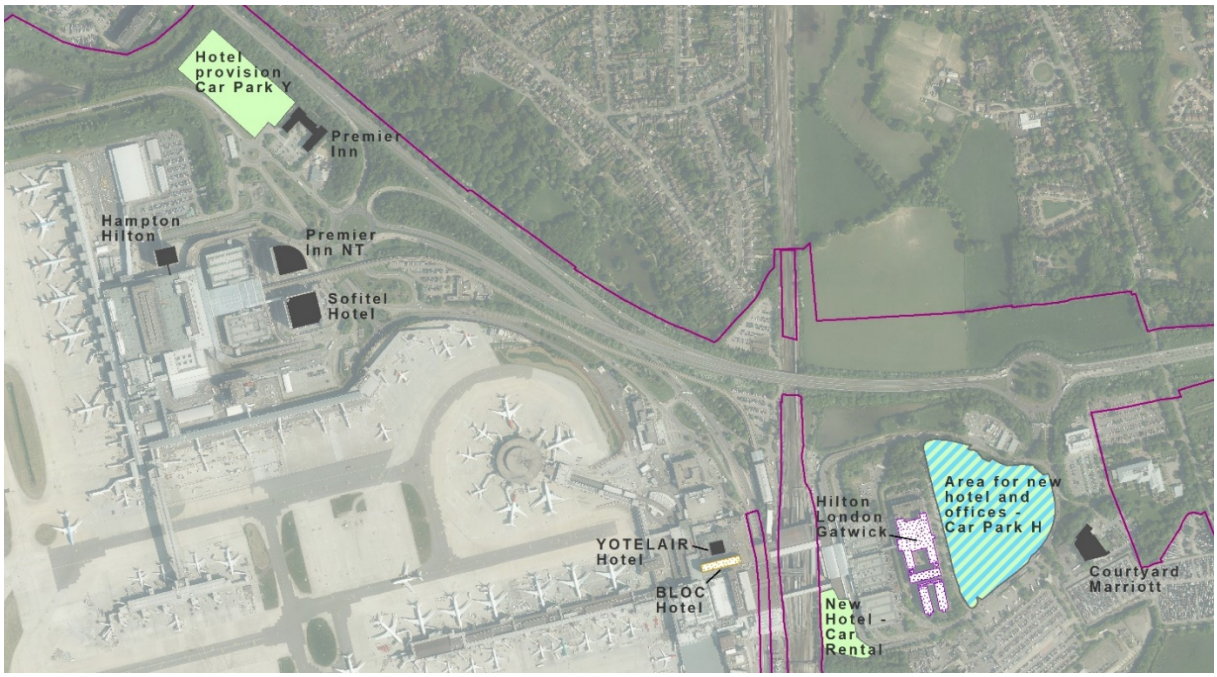
3.3.64 We are proposing to provide for an additional 1,000 bedrooms in three new hotels:

- one new South Terminal hotel (up to 400 bedrooms) in the location of existing car park H;
- one new North Terminal hotel (up to 400 bedrooms) in the location of existing car park Y; and
- one new hotel at the current car rental location (200 bedrooms).

3.3.65 In addition to the above, extensions are proposed/consented at two of the airport's existing hotels, for implementation in the absence of the Project to serve the projected increase in baseline passenger numbers, including:

- extension to the existing BLOC hotel (approximately 200 bedrooms); and
- reconfiguration of the existing Hilton hotel to provide 50 additional bedrooms.

Figure 3.4: Proposed Hotels and Commercial Development



Surface Access Proposals

3.3.66 To accommodate the proposed increase in passenger numbers accessing the airport, and taking into account other known and planned developments in the area, we are proposing improvements to the highways that serve both the South Terminal and North Terminal roundabouts to add capacity, namely:

- South Terminal: new junction, providing full grade separation; and
- North Terminal: new junction layout including some grade-separation, removing A23 westbound traffic from the North Terminal roundabout.
- M23 Gatwick Spur Eastbound: additional running lane as part of South Terminal roundabout improvements
- Longbridge Roundabout: improvements where A23 meets the A217

3.3.67 We are also proposing new car parking in order to meet additional demand generated by the proposed increase in passengers due to the Project, and to replace existing parking spaces that would be lost due to development associated with the Project.

3.3.68 Our proposals take into account an anticipated reduction in the number of spaces currently provided in unauthorised car parking sites away from the airport, which would be replaced by additional provision at the airport. Whilst we have identified this provision for additional parking, we will only build those spaces that are needed.

3.3.69 Some of the internal airport roads require changes to allow for some of the alterations to other facilities around the airfield. Enhancements will be made to the forecourts and approaches to both airport terminals.

3.3.70 Full details regarding the proposed surface access proposals are provided in Chapter 4 of this document and as shown in Figures 4.1 to 4.3.

Water Management

3.3.71 The existing airport drains to local watercourses via balancing ponds and attenuation lagoons. In order to accommodate the alterations to the northern runway, to allow for the areas of new development and to meet current planning requirements (including an allowance for climate change), revisions to the existing surface water drainage strategy are proposed.

3.3.72 A flood risk mitigation strategy will be developed for the Project in consultation with the Environment Agency and the Lead Local Flood Authority. The strategy will ensure that no additional adverse impact on flood risk exists off-site for events up to a 1% (1 in 100) annual exceedance probability event with a 35% allowance for climate change. In addition, a drainage strategy for surface water runoff will be prepared, with a design standard of 1% (1 in 100) annual exceedance probability event with a 20% allowance for climate change. At this stage, measures are anticipated to include the following:

- creation of an additional runoff treatment and storage area (including runoff from de-icing areas) to complement the existing capacity provided by Pond D. This new treatment/storage area would be located beneath Car Park Y and be supplemented by an extension to the existing Dog Kennel Pond;
- relocation of Pond A;
- diversion of the River Mole corridor;
- provision of additional floodplain capacity, through provision of the following flood alleviation and compensatory storage areas:
  - Museum Field: lowering of the existing ground levels in an area known as Museum Field along the western boundary of the site, north of the fire training ground;
  - East of Museum Field: provision of a new flood compensation area to the east of Museum Field;

  - Car Park X: lowering of the existing ground levels below Car Park X; and
  - Gatwick Stream: provision of a new flood compensation area to the east of Gatwick Stream, south of Crawley Sewage Treatment Works.

- works to realign the existing surface water drainage infrastructure along Taxiway Yankee, providing a connection to Pond D; and
- works to protect the existing Substation L from flooding.

Museum Field

3.3.73 Museum Field would be lowered by up to approximately 3.5m below existing ground level. This would provide a new flood compensation area connected to the River Mole through a spillway. The connection to the spillway would require lowering of the bank of the River Mole. It is anticipated that Museum Field would be returned to grassland following completion of the excavation works, with an access track provided around the perimeter. The field would only be occasionally be wet, to provide an allowance for storms events.

East of Museum Field

3.3.74 The works to Taxiway Juliet require the relocation of Pond A to a location north of its existing position, through which the River Mole currently flows. It is proposed to provide a diversion of the River Mole to the north of its current course. The diversion would incorporate a two-stage channel and would take a more sinuous course than the current alignment. The existing syphons and culverts would require extension. In addition, a new flood compensation area is proposed between the River Mole diversion and Museum Field. This would require lowering of ground levels by up to approximately 1.8m.

Car Park X

3.3.75 The existing Car Park X area would be lowered by a depth of up to 2.5m to create flood storage. It is anticipated that the car park would continue to be used for staff car parking (surface level parking plus up to one decked storey) following completion of the excavation works.

3.3.76 The flood storage area below the car park would be connected to the River Mole via an outfall structure, which may take the form of a flapped culvert or other arrangement to allow fish to pass back into the River Mole following a flood event.

Gatwick Stream

3.3.77 A new flood compensation area would be provided to the east of Gatwick Stream. This would require lowering of existing ground levels up to a maximum of approximately 3 metres (existing ground levels vary).

3.3.78 The flood compensation area would connect to the watercourse via a lowering of the stream bank.

Foul Water

3.3.79 In order to provide for the new and improved facilities, including wastewater from the extended terminals, hotels and Pier 7, changes would be required to the foul drainage system to improve capacity and resilience.

3.3.80 A new pumping station (Pumping Station 7a) would be constructed near the existing Pumping Station 7, to take flows from the extended North Terminal and Pier 7, and a pipeline connection to Crawley Sewage Treatment Works. The proposed pumping station is likely to require a fenced compound with an area of 260m^2 and be approximately 3m in height (above ground level) with elements up to 6m below ground level. It is estimated to have a capacity of approximately 80 litres/second.

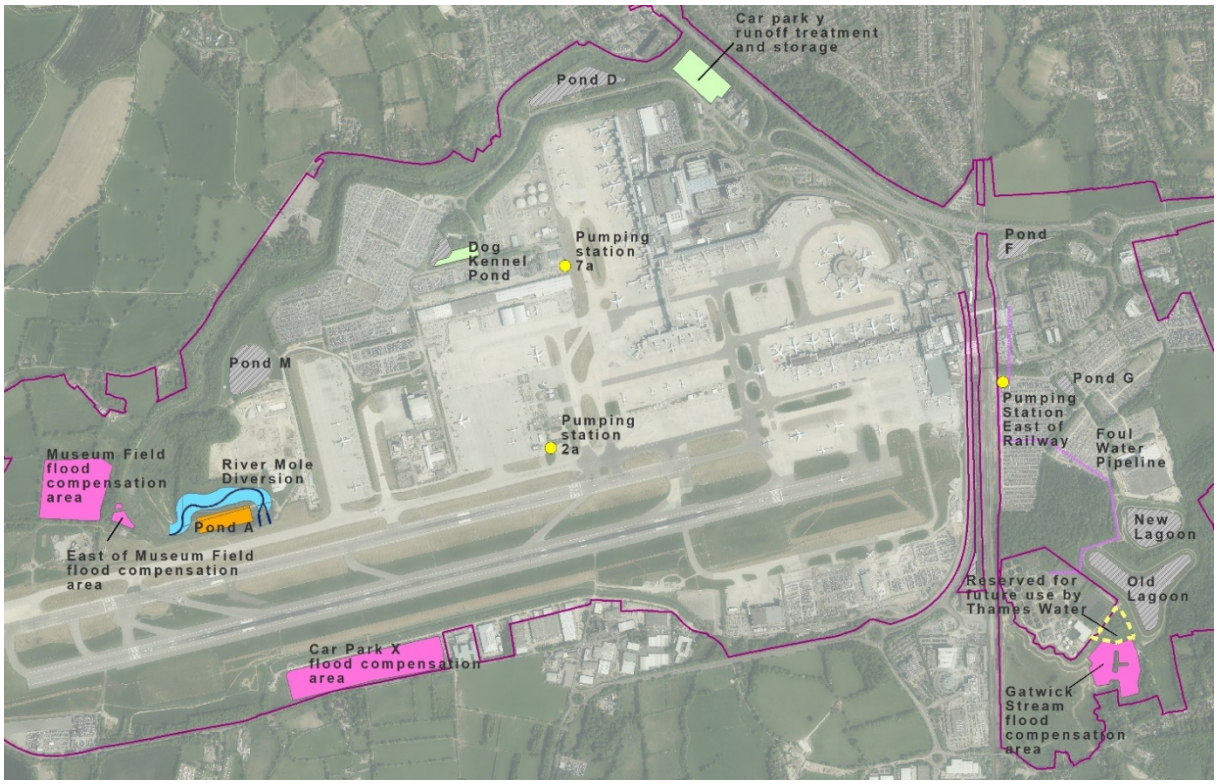
3.3.81 A second new pumping station would also be required. This would include a new pipeline connection between the new pumping station and the Crawley Sewage Treatment Works avoiding the location of existing ancient woodland. The proposed pumping station is likely to require a fenced compound with an area of 190m^2 and be approximately 3m in height (above ground level) with elements up to 3m below ground level. It is estimated to have a capacity of approximately 45 litres/second.

3.3.82 A third new pumping station (Pumping Station 2a) is proposed to allow for flows from the existing Pumping Station 3 (affected by Taxiway Juliet) and flows from Pier 6. The proposed pumping station is likely to require an area of 50m^2 and be approximately 2m in height (above ground level) with elements up to 10 metres below ground level. It is estimated to have a capacity of approximately 40 litres/second.

3.3.83 Further improvements would include upgraded capacity to existing pipelines and the decommissioning of a number of existing pumping stations.

3.3.84 In the event that there is not sufficient capacity within the existing Thames Water Treatment Works or that improvements cannot be made to provide this capacity, an expansion to the existing Crawley Sewage Treatment Works may be required and this will be undertaken separately by Thames Water. An area of land has been identified which could allow expansion on land currently owned by GAL if required but such a project does not form part of this DCO.

Figure 3.5 : Surface and Foul Water Improvements



Power Strategy

3.3.85 In order to ensure sufficient overall capacity and that power is provided to the required locations, a number of adjustments would be required to the existing facilities, including relocation of a number of existing services, cables and substations. Part of the existing airfield high voltage ring would be repositioned to the north to allow for the alterations to the existing northern runway and Taxiway Juliet.

3.3.86 Existing substations A, J, BK, BP and BR would be relocated to accommodate the following new facilities.

- Substation J: a priority substation, forming part of the airfield ring. The new substation is likely to comprise a containerised substation, with an additional transformer to replace Substation BM. The substation would occupy an area of approximately 180m^2, with a height of 6 metres above ground level and 3 metres below ground level.
- Substation BK: to be re-provided within an area of approximately 144 m^2, with a maximum height of 6 metres above ground level and 3 metres below ground level.
- Substations BP, BR and A: to be re-provided, each within an area of approximately 25m^2, with a maximum height of 5 metres above ground level and 3 metres below ground level.

3.3.87 In addition, the following new substations would be required:

- a new substation to be located to the east of the railway in an area known as the Pentagon Field; and
- a new substation to facilitate Pier 7, to the north east of Pier 7 and to the north of the cargo facility.

3.3.88 It is envisaged that the new substations would each require an area of approximately 25m^2, with a maximum height of 5 metres above ground level and 3 metres below ground level.

3.3.89 The relocation of substations and provision of additional capacity would allow for additional loads and would ensure that substations are located away from areas required for other purposes or at risk of flooding. The existing Substations BJ and BM would be demolished and not replaced.

Landscape and Ecological Planting

3.3.90 The environmental impact assessment process is ongoing as is the development of the appropriate mitigation measures. At this time, the design of the Project includes the following landscape and ecological planting proposals.

- Vegetation retention strategy to ensure green infrastructure assets are retained wherever possible, that important features (such as Riverside Garden Park, on the southern edge of Horley) are protected as far as possible and that adverse impacts on the important features and locally distinctive patterns of development at Gatwick Airport are minimised. This would include protection wherever practicable of existing significant vegetation, including hedgerows, woodland, trees, shrubs, wetland and amenity planting, or elements of the Project that lie immediately adjacent to construction areas or maintenance activities.
- Provision of public open space and footpaths, including potential provision of a new area or areas of public open space at Horley and an extension to the River Mole footpath and associated publicly accessible land.
- Creation of new, high value habitats including woodland, tree, scrub, shrub, wetland/pond and grassland.

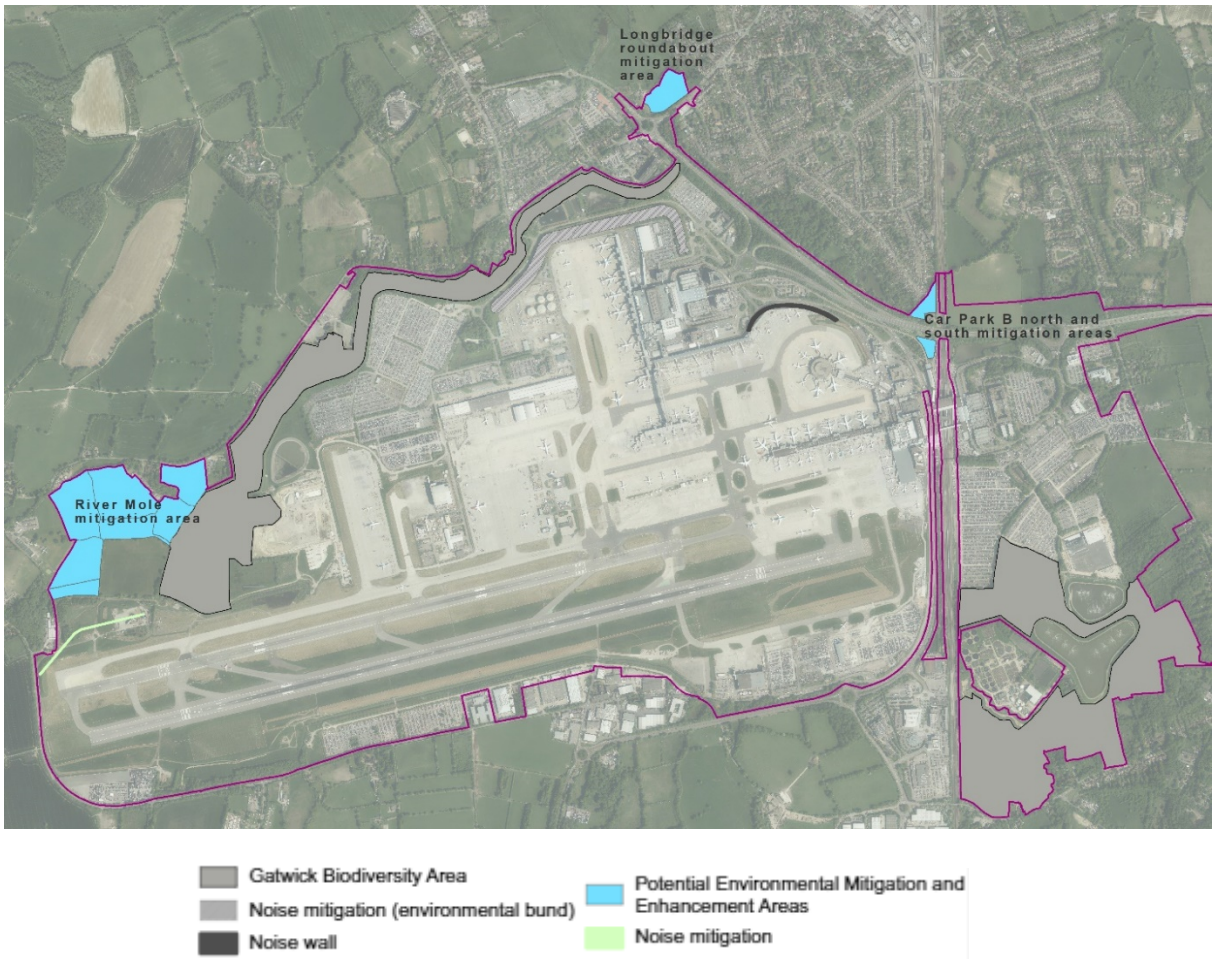
3.3.91 Further details are provided in **Chapter 8 - Landscape, Townscape and Visual Resources** and **Chapter 9 - Ecology and Nature Conservation of the PEIR**.

Environmental Mitigation Areas

3.3.92 Areas for proposed environmental mitigation are currently under consideration. To date, four areas have been included within the Project. Then locations are shown on Figure 3.6.

- Approximately 0.6 hectares of land immediately to the west of the London to Brighton railway line, north of the current A23. This area is currently used as staff car parking and may be required to provide replacement open space for the Project.
- Approximately 0.4 hectares of land immediately to the west of the London to Brighton railway line, south of the current A23. This area is currently used as staff car parking and may be required to provide replacement open space for the Project.
- Approximately 2 hectares of land to the north of Longbridge Roundabout. This area would include mitigation required as a result of the Longbridge roundabout highways works and could include surface water drainage measures, landscape and ecological mitigation planting together with any required open space replacement.
- Approximately 19 hectares of land to the east and north east of the Airfield Museum. This area adjoins the western side of the River Mole and current Gatwick Biodiversity Area that runs along the river corridor. This primary purpose for the inclusion of this area is for ecological habitat creation.

Figure 3.6: Potential Environmental Mitigation and Enhancement Areas



Appearance and Design

3.3.93 Many of the components of the Project are relocated airfield elements and it is anticipated that the appearance of the relocated facilities would be similar to that of the existing facilities. In some cases, the demolition of ageing facilities and replacement with more modern buildings is likely to result in an overall improvement in terms of appearance.

3.3.94 Extensions to the airport terminals are anticipated to be designed to 'tie in' and be in keeping with the design of the existing terminal buildings. Works to be undertaken within the terminals would result in a more modern appearance through reconfiguration and installation of new facilities.

3.3.95 The operator of the proposed hotel buildings would inform the external appearance of these buildings which would be determined prior to construction and subject to a local planning approvals process.

Lighting Strategy

3.3.96 A lighting strategy will be prepared to accompany the application for development consent, setting out the principles and parameters within which lighting associated with the Project would be designed. The strategy will identify the type of lighting to be used and measures to be

implemented to avoid and reduce glare and light spill, taking into account effects on nearby sensitive receptors and the safety of ongoing aircraft operations.

3.3.97 The altered northern runway would require new ground lighting in line with regulatory requirements.

3.3.98 In addition, lighting would be required to all external areas to ensure safety of the public and personnel. The new car parking areas would be lit with directional lighting.

3.3.99 The new road junctions are also likely to require lighting, including on the elevated sections of the new carriageways.

3.4 Sustainable Growth

Our Decade of Change Sustainability Plan

3.4.1 Our Northern Runway Project is being developed alongside our **Second Decade of Change to 2030 Sustainability Policy**[13] and 10-point plan. In bringing the Project forward, we are committed to:

- **Local Economy –** being a partner and advocating for a thriving resilient economy including contributing to local and regional workforce skills and initiatives;
- **Local Communities** – investing resources in programmes and partnerships in the region including supporting those communities that would be most affected by our operations;
- **Noise –** limiting, and where possible, reducing the airport's impact on local communities including working with partners and stakeholders to create the most noise efficient operations as possible;
- **Airport Emissions –** reducing our Scope 1 and 2 emissions by a further 25% by 2030 (i.e. reach 80% under 1990 baseline) as part of a science-based goal of reaching net zero before 2040; sourcing 50% of our network electricity and 50% of heat network from UK renewable sources by 2030. We will generate power at or near the airport and buy renewable energy direct from suppliers; and by 2030, all on-airport vehicles must meet zero or ultra-low emission standards. This includes ground support equipment and mobile construction equipment;
- **Aircraft and Ground Transport Emissions –** increasing the number of passengers and colleagues using public transport. By 2030, 60% of journeys will be zero or ultra-low emissions; working with airlines and fuel providers, to support the Sustainable Aviation decarbonisation roadmap[14];
- **Water –** reducing the airport's drinking water consumption by 50% on a per passenger basis by 2030 (compared to 2019) and continuing to improve the quality of water leaving the airport;
- **Zero Waste –** ensuring that by 2030 all materials used at Gatwick in operations, commercial activity and construction, are repurposed for beneficial use i.e. repaired, reused, donated, recycled, composted or converted to fuel for heating or transport; and

[13] https://www.gatwickairport.com/globalassets/company/sustainability/reports/2021/decade-of-change-policy-to-2030.pdf
[14] https://www.sustainableaviation.co.uk/goals/climate-change/

- **Biodiversity –** taking an industry-leading 'net-gain' approach to protecting and enhancing biodiversity at the airport including zero use of pesticides by 2030.

Draft Energy Strategy

3.4.2 We have an existing Energy Strategy for the airport that includes measures to reduce energy consumption in buildings (improved performance from building fabric and low energy equipment) and increased onsite energy generation. A **draft Energy Strategy** is proposed for the Project (see **Appendix 5.4.1 in the PEIR**). This document sets out a strategy for how we will deliver the Project, and the associated increase in demand and consumption of energy, to achieve our sustainability aims including through investing in energy efficient buildings and technologies and expanding our sourcing of energy from renewable sources.

3.4.3 As part of the Project, we will seek to minimise carbon emissions and promote sustainability, including measures to increase sustainable travel to the airport for example by limiting car usage; improvements to on airfield operating procedures; setting an approach to use of sustainable construction materials and logistics and maximising the re-use of spoil; reducing aviation emissions; and designing to appropriate energy efficiency standards.

3.4.4 The draft Energy Strategy incorporates the following energy interventions for existing buildings/areas:

- Continue with 100% procurement of renewable electricity via supply agreements, gradually increasing the % sourced from 'natural' renewable sources. Investigate purchasing electricity through power purchase agreements (PPAs) to support the growth of 'additional' renewable electricity capacity in the UK and the region.
- Implementation of additional on or near-site PV where feasible and financially viable to integrate into new or existing facilities.
- Continue to implement energy efficiency measures in existing buildings where technically practical and financially viable. These could include a range of energy retrofits (such as LED light replacements, installation of variable speed drives and improvements in insulation, ventilation and heat recovery improvements and upgrades) as well as optimisation of BMS and controls.
- Improve heat generation and supply efficiencies as older gas boilers and heat networks are replaced with the latest technology.
- Improve cooling efficiencies as existing chillers and cooling networks are replaced with the latest technology and demand-based controls are implemented (through additional variable speed secondary pumps).
- Continue electrification programme of vehicles and ground support equipment. This would be particularly applicable for light duty vehicles, and common types of ground support equipment as electric versions are readily available on the market, while some large vehicles including buses may require ultra-low fuels as a bridge to electrification.

3.4.5 In addition, we will implement and/or influence a range of energy interventions for new buildings that are part of the Project. These will include:

- Designs will be driven to improve the inherent energy efficiency performance of new buildings, using sensible and practical approaches to passive design and the appropriate incorporation of technology.

- The building regulations are anticipated to change over time, and they will set the minimum standards for buildings. We will continue to seek to go beyond the legal minimum, aspiring to achieve high energy performance standards that will enable long term efficient use of energy as well as supporting, from an energy perspective, achieving high ratings on wider environmental standards such as BREEAM, where economically and practicably feasible.
- The decarbonisation of the national grid is expected to make a major contribution to reducing GHG emissions from the direct use of electricity, in electric based cooling systems and in electric based heating via air source heat pumps.

3.4.6 In addition, we will explore interventions that go beyond those listed above as follows:

- A greater implementation of photovoltaics.
- A higher number of energy efficiency measures in existing buildings as part of the terminal extension and retrofit works involved in the Project.
- Additional improvements in cooling efficiencies as compatible cooling systems are combined, integrating the existing cooling systems with the new ones required for the expansion of new buildings.
- Evaluate available and financially viable options for provision of heating/cooling to aircraft on stand, to reduce and over time eliminate use of aircraft auxiliary power unit (APU) for this purpose.
- Notwithstanding the potential for hydrogen (combined with carbon capture, utilisation and storage) to decarbonise the UK's primary thermal energy vector (currently served by 100% natural gas), the draft Energy Strategy includes a transition of our heating systems from a reliance on natural gas to electric heat pumps (using a variety of heat sources, including air, water and sewage), retaining some of the most recent gas boilers as back-up/peaking plant.
- We will also explore the potential to implement an additional district heating network or networks for the provision of thermal energy for space heating and hot water to several buildings from existing and new energy centres drawing on a variety of technologies and heat sources.
- An accelerated rate of electrification for airside vehicles and equipment by requiring all airside vehicles and equipment to meet ultra-low emission standards by 2030 and achieve at least 50% electrification for larger vehicles, buses and ground support equipment by 2038.
- We will explore energy interventions for new buildings with some changes to improve efficiencies, such as the use of ground source and water source heat pumps prioritised over air source heat pumps to achieve higher seasonal performance factors.

Waste Strategy

3.4.7 We will be seeking to sustainably re-use materials and reduce vehicular movements associated with commercial waste and construction waste. A draft Waste Strategy is provided at **Appendix 5.3.2 in the PEIR**.

Sustainable Travel

3.4.8 We intend to put forward a robust strategy which enhances Gatwick as a regional transport hub through improvements to rail, bus, and sustainable transport with mode share targets established towards a lower carbon future.

3.4.9 Details of our mode share targets, proposed Airport Surface Access Strategy (ASAS) and Travel Plan are provided in Section 4.7 of this document.

3.4.10 In alignment with the ASAS, the Travel Plan will focus on specific interventions related to staff travel in particular. The Travel Plan will seek to promote sustainable and healthier modes of transport for staff and reduce travel to work by single occupancy car.

3.4.11 The Project ASAS and Travel Plan will be developed to deliver the growth associated with the northern runway safely and sustainably.

Carbon and Climate Change Action Plan 

3.4.12 Alongside updated energy and transport strategies, we are now developing a detailed Carbon and Climate Change Action Plan to enable us to continue to reduce carbon emissions associated with the airport (including Scope 3 emissions, such as surface access and aircraft emissions). Our intention is to publish the draft Climate Change Action Plan as part of our submission for development consent next year setting out how we will achieve reductions in the emissions over which we have direct control and how we intend to influence and guide reductions in emissions in the control of our partners. Further information on carbon and climate change, and our proposed action plan is provided in Chapter 8 in this document.

Sustainability Statement

3.4.13 We will prepare a Sustainability Statement for the Project. Our second Decade of Change to 2030 sustainability policy and 10-point plan will be at the heart of our sustainability framework. In addition, the framework will reflect the objectives set out in the Government's ANPS to achieve sustainable airport developments.

4 Our Surface Access Proposals

4.1 Introduction

4.1.1 As well as being an airport Gatwick is an important transport hub, acting as both a destination and an interchange across transport types for passengers. With excellent access by rail and road, we are the only London airport with 24-hour rail, bus and coach access daily.

4.1.2 The airport has direct access to the national motorway network, located adjacent to the M23 motorway, and is less than 10 minutes from the M25.

4.1.3 We have a very high level of rail connectivity, with 20 trains to and from central London in the morning peak hour (10 to London Bridge and 10 to London Victoria, of which four are Gatwick Express services) and direct services to a wide range of destinations. Improvement works to Gatwick's railway station to increase the size of the station concourse, provide additional lifts and escalators and improve access to the platforms commenced in 2020 and are due for completion by 2023.

4.1.4 The airport is served by frequent bus and coach services at both North and South Terminals. On average there are approximately 450 to 500 daily arrivals and departures, offering services to destinations throughout the UK and local services operating 24 hours a day, 365 days a year.

4.1.5 There are off-road pedestrian and cycle links available which provide access to the local catchment areas of Horley and Crawley, forming part of National Cycle Route 21 and cycle stands and other facilities are provided at the airport.

4.1.6 Mode share data for journeys to and from the airport show that almost 50% of passengers travel by public transport and around 40% of staff travel by sustainable modes. A large proportion of the airport traffic travels via the strategic highway network, mostly using the M23, with only limited traffic distributed on the local road network.

4.1.7 In developing our Project, we will seek to deliver improvements to transport infrastructure and local roads with our objectives being to:

- continue increasing the overall share of passengers using public transport to get to and from the airport;
- deliver improvements to local highways and junctions where this is required to support Gatwick's future growth as well as other local journeys; and
- encourage and support greater use of sustainable transport modes by our staff (including car share and company travel) by further developing our cycling and walking strategy and improving facilities for both modes as well as supporting local bus services.

4.2 Modelling

4.2.1 To support the assessment of transport infrastructure improvements in connection with our Project, we are using several analysis tools and models. These models provide a detailed representation of the services and networks used to access Gatwick and how behaviour

responds to changes and growth. They include strategic models comprising the South East's rail network and the system of motorways, A-roads, B-roads and other relevant roads across the region. These cover a large geography but include areas of detailed 'simulation' of how junctions operate in response to traffic. Detailed local models of Gatwick Airport station, the inter-terminal transit system (or shuttle), terminal forecourts and the road network connecting the M23 and A23 to the airport are also used in the assessment and to support scheme design. These provide a further level of detail to the strategic models and are sometimes referred to as 'micro-simulation' models.

4.2.2 These models analyse airport and non-airport demand on the available networks and are carefully calibrated so that the base model accurately reflects observed behaviour. Future years are assessed using forecasts of future demand comparing growth with and without the Project. Airport related traffic includes passenger, staff, goods vehicles (including cargo) and all other movements to and from the airport. Non-airport-related traffic is also forecast to grow in the models, based on assumptions of future changes in trip-making.

4.2.3 The local micro-simulation models have been analysed for the PEIR assessment and are used to refine the design of potential infrastructure improvements. They simulate the behaviour of individual people or vehicles in detail and show what happens to pedestrian or vehicle flows as a result of changes to the networks. These models cover specific, local geographic areas, as follows:

- a Local Road Corridor Model, which includes the M23 Spur, A23 London Road and Airport Way, between and including M23 Junction 9 and Longbridge Roundabout (junction of A23, A217 and Povey Cross Road). South of the airport the model covers the A23 London Road, Charlwood Road, and Tushmore Gyratory and Hazelwick Roundabout along A2011 Crawley Avenue.

- Forecourt Models for each terminal covering all airport links relevant to accessing the terminals and adjacent facilities including the connections back to North Terminal Roundabout and South Terminal Roundabout. This is used to check that access to car parks and drop off/pick up areas (including taxis, bus and coaches and car rental facilities) can operate efficiently with the anticipated growth in passenger numbers.

- A Rail Passenger Simulation Model covering Gatwick Airport Railway Station platforms and concourse and the Inter-Terminal Shuttle platforms. This provides information on station and platform crowding and capacity performance, including analysis against operational safety.

4.2.4 Strategic modelling work is also used to understand the transport effects of our proposals across the wider rail and road networks. These strategic models will be refined to undertake the Transport Assessment as part of the Environmental Statement submitted with the DCO as they provide an understanding of the transport network impacts of the Project across a much larger geography.

4.2.5 Analysis presented in the Preliminary Transport Assessment Report (PTAR) in **Appendix 12.9.1 of the PEIR** indicates that the construction and operation of the Project is not expected to have significant effects beyond the immediate local highways included in the Local Road Corridor

Model when compared to the baseline forecast. This gives us confidence that the areas we have focused on for mitigating the most significant surface access impacts of the Project are correct (see Section 8.9 in this document for information on the surface access effects of the Project).

4.2.6 The changes in traffic flows identified in these strategic models indicate that there is only a small variation in how traffic spreads around the network with additional runway capacity. Most car traffic is expected to travel to and from the airport using the Strategic Road Network (SRN), preferring motorways and main A-roads to the much smaller, local roads.

4.2.7 Typically, over 75-80% of airport-related traffic approaches Gatwick from the M23 Spur in peak periods. Most of this traffic travels to or from north of Gatwick with around a quarter to or from the south. This tendency for most airport traffic to use the M23 is expected to continue following the completion of the M23 Smart Motorway Project in 2020. The remaining airport-related road trips are distributed in much smaller proportions across the local network to the north, west and south of the airport, such as the A23 and A217.

4.2.8 The public transport study area includes the whole of the rail network in the southern half of England and Wales as well as express coach services across the country and all local bus services connecting Gatwick to surrounding communities. The public transport models are also calibrated to observed behaviour and can be used jointly with the strategic highway model to estimate future mode shares.

4.2.9 A significant part of the rail assessment focuses on Gatwick Airport station's role as an interchange, for passengers, staff, commuters and local residents. The railway station handles over 21 million journeys per annum making it the busiest station in the South East (excluding London's main terminals and interchanges). The effects of growth on crowding in the station environment are included within the scope of the assessment using criteria set out by Network Rail and DfT.

4.3 Proposed Highways Improvements

4.3.1 To accommodate the proposed increase in passenger numbers and taking into account other known and planned developments in the area, improvements are likely to be required to both the South Terminal and North Terminal roundabouts to add capacity. The designs and details of any improvements will be subject to road traffic assessment and detailed engagement with highway authorities, including National Highways. In advance of the Project, we are working with National Highways on a scheme to signalise both roundabouts and make minor changes to improve traffic flow and capacity in the period before the start of any dual runway operation, as described in **Chapter 4 of the PEIR**.

4.3.2 The locations where an increase in road traffic volumes is likely to be greatest with the Project are at the South Terminal and North Terminal junctions. We have also carefully studied how traffic uses the network immediately east, west and south of these two main junctions. In order to accommodate the proposed increase in passenger numbers, the following surface access improvements form part of the Project, which are described further in the subsequent paragraphs:

- South Terminal: new junction, providing full grade separation
- North Terminal: new junction layout including some grade-separation, removing A23 westbound traffic from the North Terminal roundabout
- M23 Gatwick Spur Eastbound: additional running lane
- Longbridge Roundabout: improvements where A23 meets the A217

South Terminal Roundabout Improvements

4.3.3 The South Terminal roundabout (also known as the Welcome Roundabout) is the sole entry point into the South Terminal area and local access roads, including the terminal forecourt, long stay car parks and commercial premises. It is served by the M23 Spur to the east (leading from the M23 Junction 9) and Airport Way from the west (leading from North Terminal roundabout). The majority of Gatwick traffic accesses the airport from the M23 and traffic for both North Terminal and South Terminal must pass through this roundabout.

4.3.4 The westbound M23 Spur was upgraded as part of the National Highways M23 Smart Motorway Project, completed in Summer 2020. As part of that work, the hard shoulder of the westbound carriageway became a permanent running lane, providing a total of three lanes approaching the airport. The eastbound M23 Gatwick Spur was not widened at the time of the westbound works. As noted in Chapter 2, further local improvements, involving signalisation and minor widening of entries/exits, are proposed in the absence of the Project (see **Chapter 4 of the PEIR**).

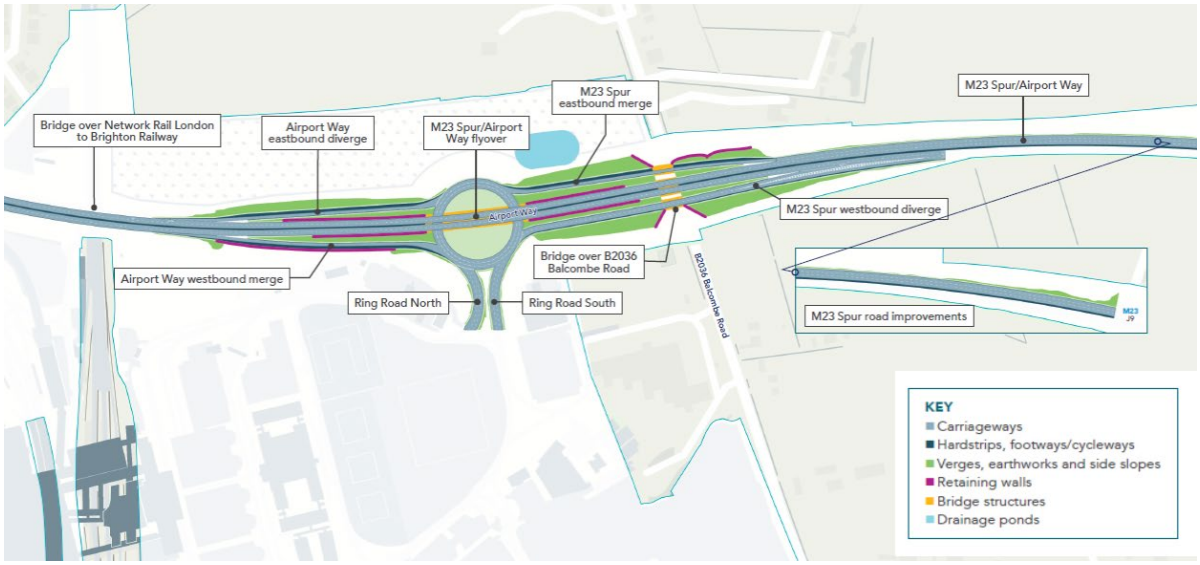
4.3.5 We are proposing that the M23 Spur/Airport Way carriageway would be raised, creating a flyover above the existing roundabout for traffic not wishing to access South Terminal. The elevated M23 Spur/Airport Way would provide clear headroom above the roundabout meaning that the road surface of the flyover would be approximately 8m above the existing ground level and its full length would be approximately 130m (see Figure 4.1).

4.3.6 To the west of the roundabout, the main carriageway would tie into the existing alignment before the bridge over the Brighton-London mainline railway. To the east, the main carriageway and slip roads to/from the roundabout would tie into the existing carriageway east of the existing bridge over the B2036 Balcombe Road, raising the existing road over the bridge as a result. This means that the bridge would require substantial widening and strengthening, and possibly full replacement. If not already undertaken as part of short-term improvements it would also be necessary to provide a third lane on the eastbound M23 Spur, to match the westbound spur road improvements undertaken as part of the M23 Smart Motorway Project.

4.3.7 The adopted Reigate and Banstead Local Plan Development Management Plan includes a site allocation for Horley Strategic Business Park (Policy HOR9) on land to the north of Airport Way. This development proposes a new dedicated, direct access onto the strategic road network (M23 spur) via an additional link off South Terminal roundabout. Both the short-term signalisation improvements and the grade-separation scheme would be capable of modification to allow for an additional link to and from the roundabout in this location. Further work is required to determine the capacity needs of this further development and the car trips it would generate.

4.3.8 The works at the South Terminal Roundabout would include the provision of a noise barrier along the elevated section of highway. The improvements will also make allowance for associated drainage works for the surface water run-off as a result of the highway changes, including a surface water drainage pond.

Figure 4.1 : Proposed South Terminal Roundabout Works



North Terminal Roundabout Improvements

4.3.9 The North Terminal roundabout is the entry point to the North Terminal and local access roads, including the northern and east perimeter roads. The existing layout consists of a circular five-arm at-grade roundabout to the north east of the North Terminal, to the south west of the A23.

4.3.10 There is currently no direct entry to the roundabout southbound from Horley and no direct exit from the roundabout on to the A23 southbound towards Crawley. Both airport and non-airport traffic uses this busy roundabout. Local improvements are proposed in the absence of the Project (see **Chapter 2 and Chapter 4 of the PEIR**).

4.3.11 We are proposing a grade separated junction design. The outline concept for this junction is to replace the existing roundabout with a signalised junction arrangement and some grade-separation to cater for some traffic flows. This would provide extra capacity for movements to and from the airport and would separate airport and non-airport traffic, reducing conflict in peak periods, thereby reducing congestion. As part of this solution, an elevated flyover would be built to carry traffic between Airport Way (from South Terminal and the M23) and the A23 towards Horley. Additional improvements would be made to Gatwick Way to accommodate an increase in traffic flow towards Northgate Road (Figure 4.2).

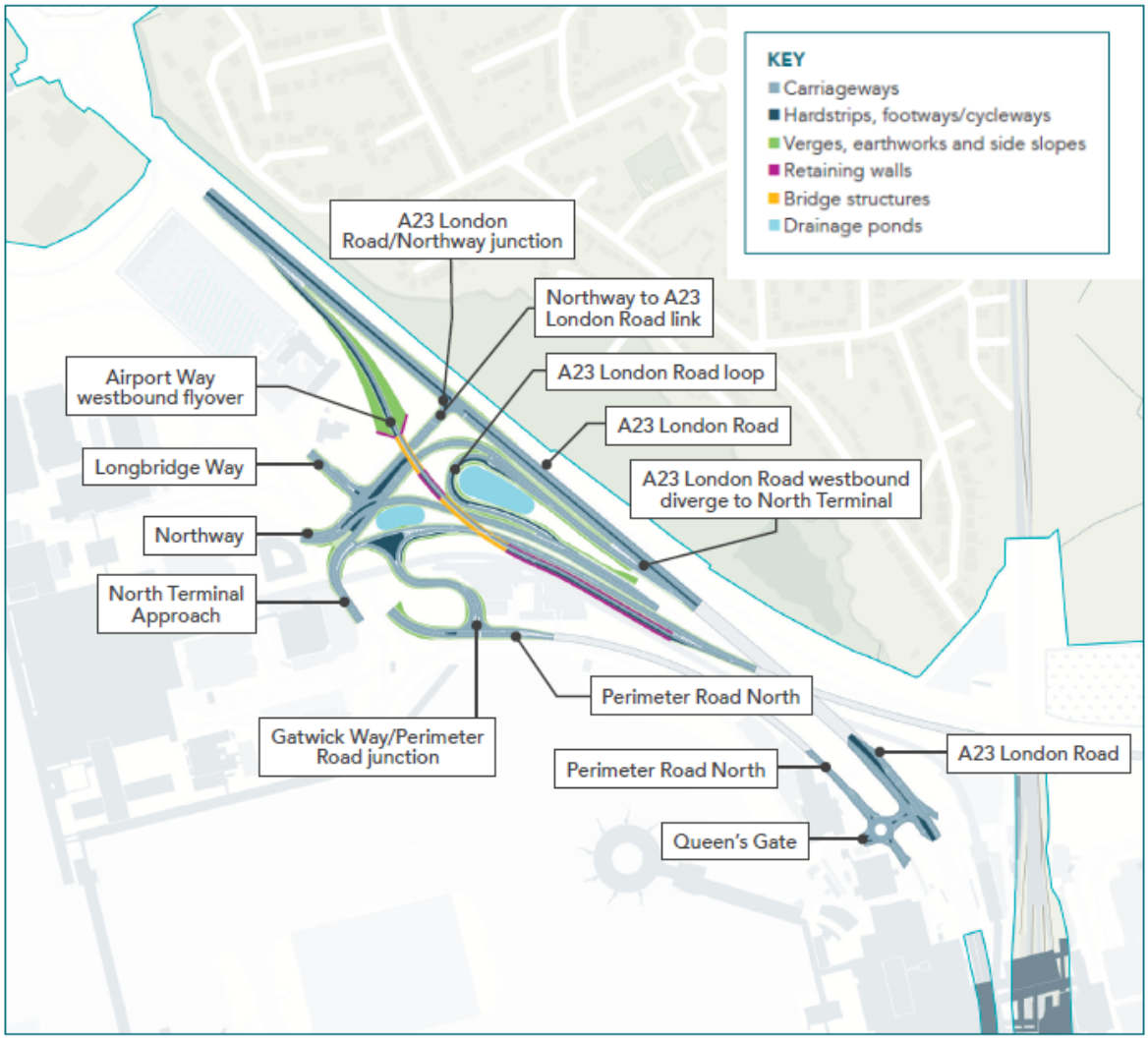
4.3.12 The new junction would include a new signal intersection on the A23 to facilitate a direct movement from the airport to turn right on to the southbound A23 towards Crawley, relieving a current constraint. Traffic between Airport Way and Longbridge Way, for access to North Terminal long stay car parks would be routed via Gatwick Road to avoid conflicts with traffic accessing or egressing the North Terminal forecourt area and short stay car parks. The permanent layout of the new junction would not require additional land to accommodate running lanes, except in respect of the elevated link from Airport Way to the A23 northbound. Traffic between Horley and the M23 at Junction 9 and between Horley and Crawley along the A23 would not need to pass through the new airport access junction in either direction. The elevated link from Airport Way towards Horley would sit approximately 8 metres above the new junction to

provide the required clearances as required by National Highway's safety and design standards.

4.3.13 The flyover structure is anticipated to require three separate spans to cross at-grade carriageways and is expected to comprise a typical steel beam superstructure with a concrete slab deck on concrete abutments and piers, with piled foundations. The overall structure would be approximately 200m long. Retaining walls would be required to separate adjacent links at different levels or gradients.

4.3.14 The works to create the new North Terminal junction and flyover would include the provision of two noise barriers to help reduce the impacts of road traffic on local neighbourhoods. The first barrier would be located along the elevated central section of the highway, while the second would be located on a section of the A23 adjacent to Riverside Garden Park.

Figure 4.2 : Proposed North Terminal Roundabout Works

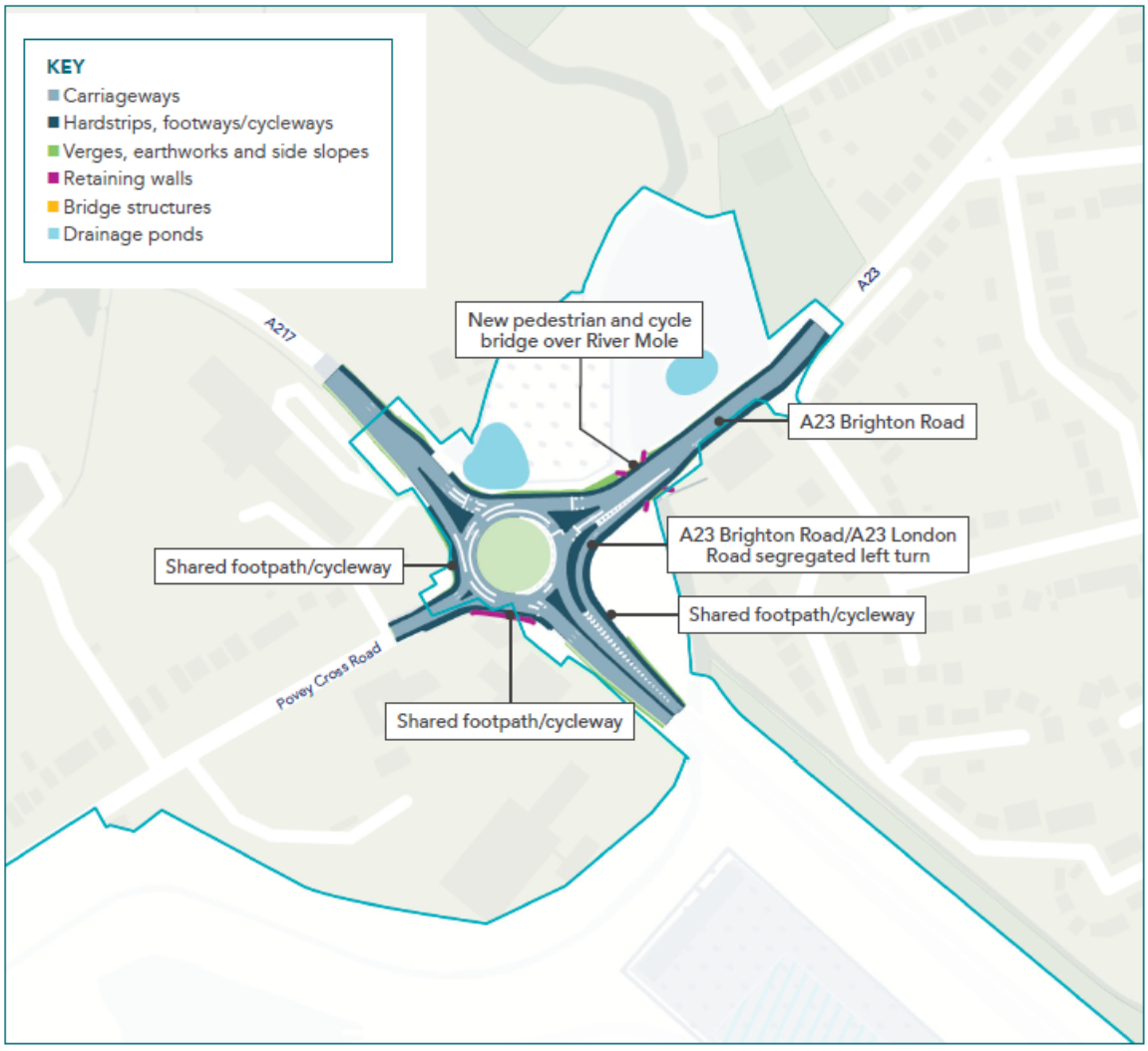


Longbridge Roundabout

4.3.15 Works are also required to improve the Longbridge roundabout, including alterations to the existing layout. Options have been considered in relation to operational capacity, compliance with design standards and impact on surrounding land and property (Figure 4.3).

4.3.16 The proposed solution is to substantially improve the roundabout and widen the running lanes throughout the junction, which are currently too narrow for some goods vehicles and cause them to straddle two lanes for certain manoeuvres so creating a capacity constraint. The new roundabout would be slightly larger and would extend further west and north to accommodate the wider lanes, improved pedestrian crossing facilities and extra capacity on exit and entry lanes, particularly for the A23 arm to and from Horley. Associated drainage works, including ponds to accommodate any additional surface water run-off as a result of the highway improvements will be included in the design.

Figure 4.3 : Longbridge Roundabout Works



Internal Access Routes

4.3.17 Some of the internal airport roads require changes to allow for some of the alterations to other facilities around the airfield. The existing Larkins Road would require diversion on a temporary basis to ensure continued access.

4.3.18 Within the airside area, an east-west track for operational vehicles would be constructed between the main and northern runways for completion prior to opening of the realigned northern runway.

4.3.19 Other surface access mitigation measures to be adopted include implementation of a Construction Traffic Management Plan and Travel Plans to support airport workers during both the construction and operational phases. Development of the proposals for the main highway junctions includes providing for pedestrian and cycling requirements, ensuring safe accessible routes are maintained. Ongoing monitoring of travel patterns will help ensure the success of the Travel Plan and to implement measures to further encourage the use of sustainable modes of transport as part of the Airport Surface Access Strategy. Monitoring will be undertaken to assess the performance against targets.

Forecourts

4.3.20 North Terminal Forecourt comprises North Terminal Approach, Furlong Way, Racecourse Way, Arrivals Road, Departures Road, Coach Road and Northway. These links provide access to the terminal frontage, drop off areas, bus and coach stands, car rental facilities, short stay car park entrances and taxi ranks. Departures Road includes a restricted access link to the Upper Forecourt for premium drop off (limited to certain airlines only). Long stay car parking at North Terminal is accessed via Longbridge Way as a separate access off North Terminal roundabout.

4.3.21 South Terminal Forecourt comprises Ring Road South, Eastway, Westway, Coach Road, Upper Forecourt, Lower Forecourt and Ring Road North. These links provide access to the terminal frontage, drop off areas, bus and coach stands, car rental facilities, long stay and short stay car park entrances and taxi ranks. Upper Forecourt has restricted access and is used for airport taxis, car park shuttle buses and the dedicated electric charging points formerly used by the Bluecity electric hire car fleet.

4.3.22 Forecourt charging was introduced in 2021 for vehicles dropping off passengers at either terminal. Passenger pick-up is already charged and takes place within the short stay car parks. These charges target 'kiss and fly' journeys which have the greatest impacts as they involve two separate journeys to and from the airport, adding to congestion and in most cases increasing traffic emissions.

4.3.23 The forecourts and approaches to both terminals would be enhanced, with routes providing access to the terminal frontage, multi-storey and long stay car parks, hotels and pick-up and drop-off areas for different transport modes. With changes to the proportion of passengers arriving by each mode some areas will become busier than others. The way in which access is managed for different modes may change to optimise the use of available capacity.

4.4 Rail Improvements

4.4.1 Planning permission was granted in 2019 for significant upgrades to Gatwick's railway station. These improvements, which are being carried out by Network Rail and part funded by Gatwick will be completed by 2023 and prior to operation of the Project so there will already be capacity in place to accommodate growth. The enhancements provide better links and more capacity between the platforms and a larger station concourse, improving passenger flow (Figure 4.4). Having the station directly connected with the South Terminal and next to the shuttle to the North Terminal is an important part of our surface access strategy and supports our high rail mode share.

4.4.2 Our initial analysis of the planned infrastructure shows that further station improvements are not likely to be required to accommodate the peak flows generated by the Project. For the Environmental Statement, additional sensitivity analysis will be undertaken to explore the effects of further increases in rail mode share beyond our target levels.

Figure 4.4 : Artists Impression of Gatwick Airport Rail Station Upgrade

4.5 Gatwick Inter-Terminal Transit System

4.5.1 The Inter-Terminal Transit System (ITTS, or shuttle) provides a dedicated, elevated people mover system connecting North Terminal and South Terminal. At South Terminal, the station is located adjacent to Gatwick Station. The ITTS comprises a pair of parallel concrete guideways approximately 8 metres above ground level, each operated by a three-car rubber-tyred vehicle, which runs throughout the day.

4.5.2 The ITTS capacity is governed by the size of vehicle, frequency of service and journey time (including the dwell time at each end station). Further work will determine the scale of intervention necessary to adequately cater for demand, noting that some improvements can be made within the existing operation.

4.5.3 Analysis indicates that reducing the headway of the system from 6 minutes down to 5 minutes has the greatest benefit in terms of adding capacity in peak periods and we are working to confirm that this change in operations is possible with the existing system.

4.6 Car Parking

4.6.1 Three new car parks are proposed for implementation in the absence of the Project to serve the projected increase in passenger numbers. Proposed improvements would take the future baseline car parking provision on the airport to 53,451 spaces.

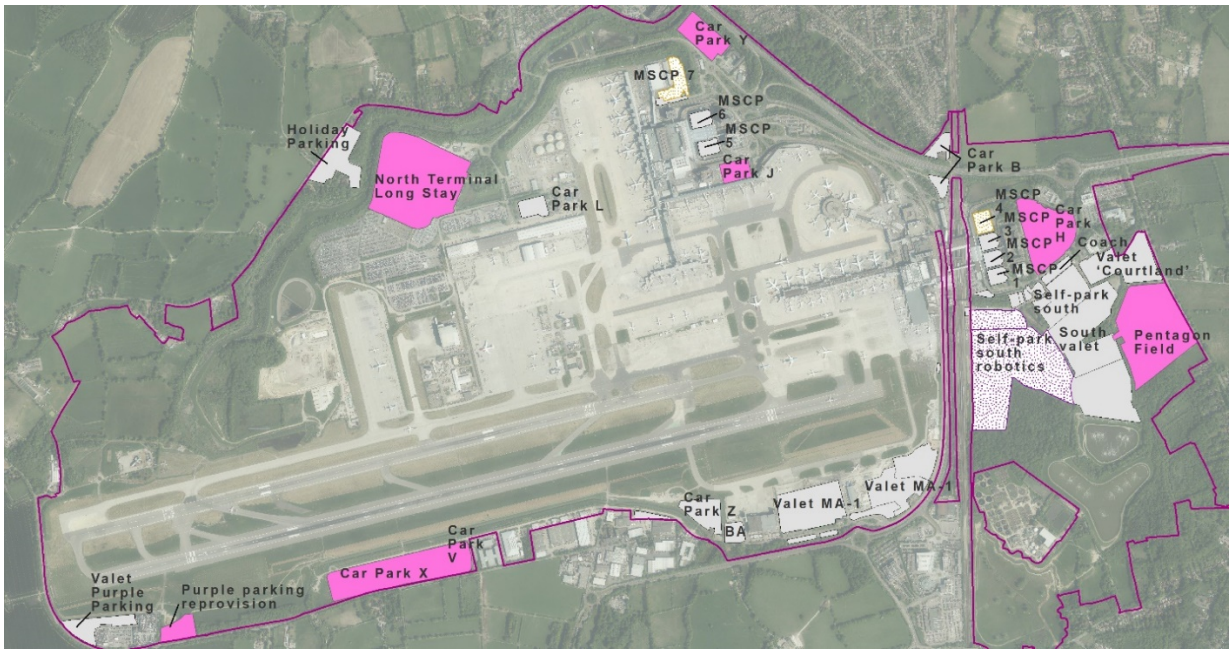
4.6.2 Further car parking would be required on site to meet additional passenger demand generated by the the Project, and to replace existing parking spaces that would be lost due to development

associated with the Project. The plans also take into account an anticipated reduction in the number of spaces currently provided in unauthorised car parking sites away from the airport, which would be replaced by additional provision at the airport in line with Crawley Borough Council's local plan policy and the policies of several other local Councils. Table 4.1 sets out the proposed car parking provision as part of the Project and Figure 4.5 illustrates the location for the new car parking (also see **PEIR Figure 5.2.1b**):

Table 4.1 : Proposed Additional Passenger Car Parking

Parking Type	Footprint (hectares)	Maximum Height (above ground level)	Estimated Spaces
North Terminal Long Stay (decked parking)	13.0	11 metres	4,500
Car park J multi-storey	1.0	27 metres	900
Car park Y multi-storey	1.9	27 metres	3,000
Car park H multi-storey	0.5	27 metres	1,800
Pentagon Field (decked parking)	8.8	8 metres	5,800
Car parks X and V (decked parking)	6.9	7 metres	2,500
Total	**32**		**18,500**

Figure 4.5 : Proposed Location of Additional Car Parking



4.6.3 In addition to the above, an area in the western part of Crawter's Field may be required for surface parking to replace part of the existing 'Purple Parking' (operated by a third party) which would be lost to make way for the proposed end around taxiway at the south western part of the airfield. If required, this would be replacement rather than new parking provision.

4.6.4 The overall net increase in passenger car parking spaces would be approximately 18,500. Our intention is to provide only those spaces that are required to meet demand, whilst continuing to meet local plan policy requirements and maintaining a shift to more sustainable travel modes for passengers and staff.

4.6.5 No additional car parking for airport staff is proposed. Historically, we provided around 7,200 spaces for staff. However, as staff car mode share has decreased, we have taken steps to reduce this by over 1,000 spaces in the last five years. We are currently reviewing the optimum allocation of spaces and location for these staff spaces, allowing for an increase in staff numbers and changing work patterns but alongside promoting use of more sustainable modes of travel to work, including car sharing. Overall, and even allowing for a larger workforce, it is proposed to reduce the total number of spaces provided per 1,000 employees across the airport. This will either mean holding at the current number of spaces or seeking further reductions.

4.7 Mode Share, Airport Surface Access Strategy (ASAS) and Travel Plan

4.7.1 We are committed to low-carbon growth and our Decade of Change strategy already sets ambitious carbon reduction targets in the absence of the Project. These inform headline mode share targets established to act as a benchmark for the transport assessment for PEIR as documented in the PTAR in **Appendix 12.9.1 of the PEIR.**

4.7.2 Ways of achieving these mode share targets without adding further measures specific to the Project have been tested through the strategic modelling process to understand the impact of 'pull' and 'push' measures that may be required. 'Pull' measures are designed to attract people to use particular modes and include committed and planned transport improvements such as M23 Smart Motorways or planned upgrades on the Brighton-London main line. 'Push' measures are those that may put people off travelling in a certain way, usually using cost or capacity as a lever, for example, increasing forecourt or parking charges.

4.7.3 The final strategy in the application for development consent will determine if additional measures are required to help achieve these mode share targets, allowing for growth. This will be informed by discussions at the Gatwick Airport Transport Forum and will include the approach we will take to monitor travel patterns and report how well we are meeting the Airport Surface Access Strategy targets we aspire to. We do not rely on these targets for the assessments contained in the PEIR.

4.7.4 We intend to put forward a robust strategy which enhances Gatwick as a regional transport hub through improvements to rail, bus, and sustainable transport with challenging but achievable mode share targets established towards a lower carbon future.

4.7.5 In alignment with the ASAS, the Travel Plan will focus on specific interventions related to staff travel. The Travel Plan will seek to promote sustainable and healthier modes of transport for staff and reduce travel to work by single occupancy car.

4.7.6 The Project ASAS and Travel Plan will be developed to help deliver the growth associated with the northern runway safely and sustainably. The proposed headline targets common to both the Baseline Case and with Project ASAS are:

- Achieve 60% sustainable travel mode share for airport passengers by 2030 under the scrutiny of the Transport Forum Steering Group (from 48% in 2020).
- Demonstrate clear progress towards reaching a rail mode share aspiration of 50% by 2030 (from 42% in 2019).
- Achieve 60% of staff journeys to work by sustainable modes (public transport, active travel modes and group travel provided by individual employers for their staff, referred to as 'company transport') and including other low emission initiatives for those continuing to travel by car (car share and zero emission vehicles) by 2030 (from 39% in the 2016 Staff Travel Survey).
- Achieve a year-on-year increase in bus use by staff and passengers, and demonstrate measurable value for money from our Sustainable Transport Fund.
- In proportion with the sustainable mode share targets set above, to deliver:
    - A reduction in air passenger "Kiss and Fly" car journeys.
    - A reduction in single occupancy car journeys by staff and an increase staff car journeys by registered car share users.
    - A reduction in staff car parking availability in line with a shift to more sustainable modes.

4.7.7 At this stage, these targets are aspirational and will require discussion and agreement with stakeholders prior to making the application for development consent and subject to model testing. The measures proposed to help deliver the targets with and without the Project may differ in detail and scale.

4.7.8 To help achieve these targets, we will action the following 'pull' measures:

- Road and Rail – support all committed highways and rail schemes due for delivery before 2025, which are necessary for background growth and provide sufficient capacity for airport growth.

- Rail – Support Network Rail in providing additional rail network capacity delivered through committed and planned schemes which provide for commuter growth in the South East, but which will also accommodate additional airport demand at the target mode share. Deliver the station improvement project to provide sufficient capacity.

- Bus and Coach – Work with coach and bus operators to provide an appropriate increase in service frequency as well as new route offers to accommodate future growth.

4.7.9 A series of improvements, which include those being developed as part of national or regional road and rail strategies and which are near certain or more than likely to occur, have been included in our modelling. These apply to both the Baseline Case and with the Project and are described in the PTAR in **Appendix 12.9.1 of the PEIR.**

4.7.10 In order to assess how well these measures work in helping us achieve our targets, we will develop a programme for monitoring progress, in consultation with our Airport Transport Forum. Further actions which we are considering which could lead to an increase in sustainable mode share across passengers and employees include:

- Incentives for staff around electric vehicle uptake as well as restrictions on staff parking.
- Support improved accessibility and connectivity for public transport, including rail, express coach, and local bus to make public transport the favoured choice for access for passengers and staff. This would include developing a Mobility-as-a-Service platform for the Airport.
- Further work with coach and bus operators to provide an appropriate increase in service frequency as well as new route offers to accommodate future growth.
- Support bus and rail operators to ensure early morning (04:00-07:00), late evening and weekend services are available to cater for staff shift patterns and to match the summer and winter flight schedules.
- Work with bus and rail operators to adopt the Gatwick Staff Travel Discount and to potentially create a Gatwick Staff Travel Card Area (combined across bus and rail) incorporating a specific catchment or series of post codes.
- Alongside the above to reduce car parking for staff, reflecting the same catchment area or postcodes.
- Complete a further review of options to manage forecourt access and passenger car parking, which could include increasing charges still further in real terms.
- Develop plans for a new Gatwick Cycle Hub in consultation with stakeholders and partners.

4.7.11 Car travel to Gatwick Airport will continue to be important and the ASAS and Travel Plan will need to consider measures which improve car journeys to reduce the impact of congestion whilst also making these journeys more sustainable. These include:

- Ensure there is sufficient capacity along the M23 Spur to accommodate airport and non-airport traffic on the strategic road network and to achieve speeds and delays at levels similar to today so they remain the most attractive routes.
- Provide better travel conditions on through routes for non-airport users and, where possible, to separate airport traffic from non-airport traffic to add capacity and resilience as well as to improve safety.
- Develop a strategy to support more journeys to the airport by Electric Vehicles or Zero Emission Vehicles, such as providing or supporting provision of electric vehicle charging on site or in the vicinity of the airport.

4.8 Active Travel

4.8.1 There are very few passengers who walk or cycle to Gatwick Airport (less than 0.5%). However, based on the 2016 staff survey, around 3% of staff travel to Gatwick by these active modes. Given the extent of the catchment area for walking and cycling trips, the focus of active travel is on staff travelling from nearby residential areas, including Horley and Crawley.

4.8.2 Gatwick has significantly improved facilities for active travel on and around the airport in recent years. We are exploring options to improve walking and cycling still further and will include relevant changes as part of the design of any highway improvements. The proposals include:

- new footways to join up existing routes, including a new pedestrian and cycle bridge over the River Mole to provide a more direct link between Longbridge Roundabout and the North Terminal;
- Provision of signal-controlled pedestrian crossings at the North Terminal roundabout;
- Shared cycle footway along Perimeter Road North; and
- Improved connection to National Cycle Network Route 21 at the South Terminal.

5 Construction and Phasing

5.1 Introduction

5.1.1 We are committed to being a good and responsible neighbour throughout the Project construction phase, taking into account and maintaining consideration of the community and for the environmental impacts of the development. This will include incorporating best practices where applicable, keeping local authorities and community groups informed about the development, minimising disruption in the locale, and employing local businesses wherever possible.

5.1.2 Construction will be undertaken in accordance with a Code of Construction Practice (see **Appendix 5.3.1 of the PEIR** for our draft), which sets out the key management measures that contractors would be required to adopt and implement. These measures will be developed based on those identified during the EIA process, including strategies to minimise the potential environmental effects of construction, such as controlling and limiting dust, air pollution and engine emissions and limiting disruption and noise from construction activities as far as reasonably practicable.

5.1.3 We also intend to register the site under the Considerate Constructors Scheme or a locally recognised certification scheme.

5.1.4 The details of construction methods, timing and phasing are necessarily broad at this stage and will be refined throughout the EIA process. Where options remain, the limits of our environmental assessment have been set sufficiently wide to allow assessment of a reasonable worst-case scenario.

5.1.5 Full details of the construction methods, timing and phasing are described in **Chapter 5, Section 5.3 of the PEIR.**

5.2 Indicative Phasing of Construction Works

5.2.1 The timing of the Project would be dependent on the timing of securing development consent and the discharge of the associated requirements. The indicative construction programme is based on construction commencing in 2024. The programme for the main airfield construction works would be of approximately five years duration enabling the altered northern runway and taxiways to be complete and fully operational in combination with the main runway in 2029. During the construction period the northern runway would not be available as a standby runway for a period of several months.

5.2.2 The indicative construction phases of the Project are set out in Table 5.1 below. Further details of the indicative phasing are provided in **Appendix 5.5.1 of the PEIR** and the **Construction Phasing Plans** which form part of this consultation**.**

Table 5.1 : Indicative Construction Phasing

Anticipated Phasing	Component of the Project
2023	Surveys such as ecological surveys that may be necessary
2024	Commencement of main construction phase
2024	Early works, including establishment of compounds, fencing, early clearance and diversion works and re-provision of essential replacement services.
2024-2029	Reconfiguration of existing maintenance facilities (Phase 1) Alterations to the existing northern runway Airfield works to support use of the realigned northern runway
2029	Northern Runway opens
2030-2034	Pier 7
2024-2030	Extensions to North and South Terminals
2024-2032	Hotel and commercial facilities
2024-2035	Car parking
2029-2034	Ongoing reconfiguration of existing maintenance airfield facilities (to final state) Further improvements to airfield facilities
2029-2032	Surface access improvements including: South Terminal roundabout improvements (2029-2030) North Terminal roundabout improvements (2029-2032) Works to Longbridge roundabout (2030-2032)
2035	Reinstatement of final land use at temporary construction compound locations
2024-2038	Flood compensation areas

5.3 Indicative Phasing for Delivery of the Main Facilities

5.3.1 Within the above indicative programme, the likely phasing of delivery for airfield, terminal, hotel and commercial, car parking, surface access improvements and demolition of facilities is outlined below. The works in the period up to 2029 allow the airport to transition to serve dual runway operations. Upon completion of these works, some construction activity will continue over the period 2029 to 2038 to enable the full capacity uplift brought by the Project to be realised.

Airfield

5.3.2 The location of the works is shown in **PEIR Figure 5.2.1a - Sheet 1** and Figure 3.2 in this document. A number of activities have been identified that would require construction to commence promptly after the grant of development consent. Early works would include the following:

- Establishment of the main contractor compound, airfield satellite compound (on airfield) and surface access satellite contractor compounds (off- airfield)
- Fencing, early clearance and diversion works and re-provision of essential replacement services

5.3.3 Following completion of enabling works, the main works to reconfigure the airfield and airfield facilities (including maintenance, motor transport and the CARE facility), commence from 2024:

- Works at Taxiway Juliet East would include utility diversions, earthworks and paving. The existing pavement associated with Taxiway Juliet East would be removed and the area no longer required as taxiway would be returned to grass, and drainage would be installed
- Taxiway Juliet (Code C) (2024-2026)
- Pumping Station 2a (2024-2025)
- Relocation of Pond A (Phase 2) (2024-2025)
- Phase 1 of CARE, grounds maintenance, surface transport and motor transport facilities (2024-2025)
- Work on the noise mitigation feature including clearance and removal of existing bund material would be completed (2024)
- flood compensation areas at Museum Field, east of Museum Field and at car park X (2024-2026)
- Excavation/ground lowering for the flood compensation area at car park X (2024)
- Works to relocate the fire training ground and Rendezvous Point North (2024)

5.3.4 The following works commence from 2025:

- Works at Taxiway Lima and Taxiway Tango, and this route would be open for aircraft operations in 2026. This would require Phase 1 of the reconfiguration of Stands 150-152 to be completed, to coincide with completion of Taxiway Lima
- Works to relocate the existing Virgin infrastructure from the northern side of the Virgin hangar to the southern side
- substation A (2025-2026)
- Taxiway Juliet East (Code E – Uniform to Sierra) (2025-2026)
- Taxiway Tango cut-through (2025-2026)

5.3.5 The following works commence from 2026:

- Works at Taxiway Juliet West including paving works. The existing pavement associated with Taxiway Juliet West would be removed. Drainage would be installed (2026)
- Construction works for the adjustments to the existing northern runway are anticipated to commence at this time. The redundant 12 metre strip would be broken out and returned to grass (2026-2027)
- Works on underground storage beneath car park Y (2026-2028)

5.3.6 The following works commence from 2027:

- Works and paving associated with the end around taxiway west and east would also be undertaken following completion of the utility diversion works
- Runway exits (northern runway to Taxiway Juliet and main runway to northern runway) (2027-2028)

5.3.7 The following works commence from 2028 onwards:

- Construction of Charlie Box (2028-2031)
- Phase 2 works to CARE facility to provide additional capacity (2028-2030)
- Provision of a new area of remote stands in the existing area to the north of Taxiway Juliet (in an area to be known as Oscar) (complete 2031)
- Provision of one new Code C stand north east of the existing Virgin hangar (complete 2031)
- Works to Taxiways Whiskey, Victor and Zulu (2031)

- Conversion of existing remote stands located to the west of Pier 3 to Code C fully serviced stands (2030-2031)
- Gatwick Stream flood compensation area (2036-2038)

Terminal Extensions and New Pier

5.3.8 The location of the works is shown in **PEIR Figure 5.2.1a - Sheet 2** and Figure 3.3 in this document**.** The anticipated programme for the terminal extensionsand new Pier is as follows:

- North Terminal IDL extension: 2024-2027
- South Terminal IDL extension: 2025-2027
- Changes to North Terminal Forecourt (2024-2025)
- Changes to South Terminal Forecourt (2025-2026)
- North Terminal baggage reclaim extension: 2026
- North Terminal baggage hall extension: 2027-2030
- Pier 7 (2030-2034)
- Provision of a transition space and route to connect to a new autonomous vehicle facility 2030-2034

Hotel and Commercial

5.3.9 The location of proposed hotel and commercial facilities is shown in **PEIR Figure 5.2.1c** and Figure 3.4 in this document. The timing of construction for the proposed hotel and commercial facilities would be dependent on the commercial need. However, for the purposes of assessment, we have assumed the following:

- Offices: 2030-2031
- Hotel at the current car rental location: 2024-2025
- South Terminal hotel: 2027 to 2029 (Phase 1) and 2030 to 2031 (Phase 2)
- North Terminal hotel: 2031-2032
- New hangar: 2032-2033

Car Parking

5.3.10 The locations of the proposed car parks are shown in **PEIR Figure 5.2.1b** and Figure 4.5 in this document. The broad construction sequence for provision of car parking is anticipated to be as follows:

- North Terminal Long Stay: 2024-2025 (Phase 1)
- Car park J multi-storey: 2025-2026 (Phase 1), 2026-2027 (Phase 2)
- Pentagon Field (decked parking): 2028-2029 (earthworks commencing from 2024)
- Car park H multi-storey: 2027-2028 (Phase 1), 2030-2031 (Phase 2)
- North Terminal Long Stay: 2031-2032 (Phase 2)
- Car park Y multi-storey: 2031-2032 (Phase 1), 2034-2035 (Phase 2)

5.3.11 In addition to the above, part of Crawter's Field may be required to provide for replacement of the existing 'Purple Parking' that would be removed as part of the Project due to works to create the western end around taxiway. If required, construction is anticipated to occur over the period 2025-2026.

Surface Access Improvements

5.3.12 The location of the surface access improvements is shown in **PEIR Figure 5.2.1d** and Figures 4.1, 4.2 and 4.3 in this document. Lead-in works for the surface access improvements are anticipated to occur during 2028 to 2029. Works to improve the South Terminal roundabout are anticipated to commence in 2029 and to be complete in 2030. This would be followed by works to the North Terminal roundabout, which would commence in 2029 and be completed in 2032. Compounds associated with the surface access works would be set up ahead of these works (from 2024).

5.3.13 Works to the South Terminal roundabout would require standard highways construction for at-grade highways. The flyover is anticipated to consist of a steel beam superstructure with a concrete slab deck on concrete abutments and piers, and piled foundations. Retaining walls would be required close to existing buildings and Pond G and to separate adjacent links at different levels or gradients. The M23 Spur over the B2036 Balcombe Road would be raised. Balcombe Road overbridge would require strengthening or replacement, as well as widening to accommodate slip roads.

5.3.14 Works to the North Terminal roundabout would require standard highways construction for at-grade highways. The flyover is anticipated to consist of a steel beam superstructure with a concrete slab deck on concrete abutments and piers, and piled foundations. Retaining walls would be required to separate adjacent links at different levels or gradients.

5.3.15 Works are also required to the Longbridge roundabout, including alterations to the existing layout. These works are anticipated to occur during the period 2031 to 2032.

Demolition Activities

5.3.16 In order to allow for the construction of the proposed facilities and reconfiguration of existing facilities, a number of existing facilities would be subject to demolition. These are shown at **PEIR Figure 5.2.1h** and include the following:

- Former TCR snowbase building (2024)
- Parts of the existing fire training area (2024)
- Pond A (removal and infill) (2024-2025)
- Pumping stations 2, 3, 4, 5, 17 and 45 (2024-2031)
- CARE (recycling area) and motor transport, surface transport and ground maintenance facilities (2025)
- Part of Purple Parking decked structure (2025-2026)
- Substations A, BK, J, BP, BR, BJ and BM (2025-2030)
- Decommissioned airfield operations building, including emergency air traffic control tower (2026-2031)

5.4 Construction Compounds

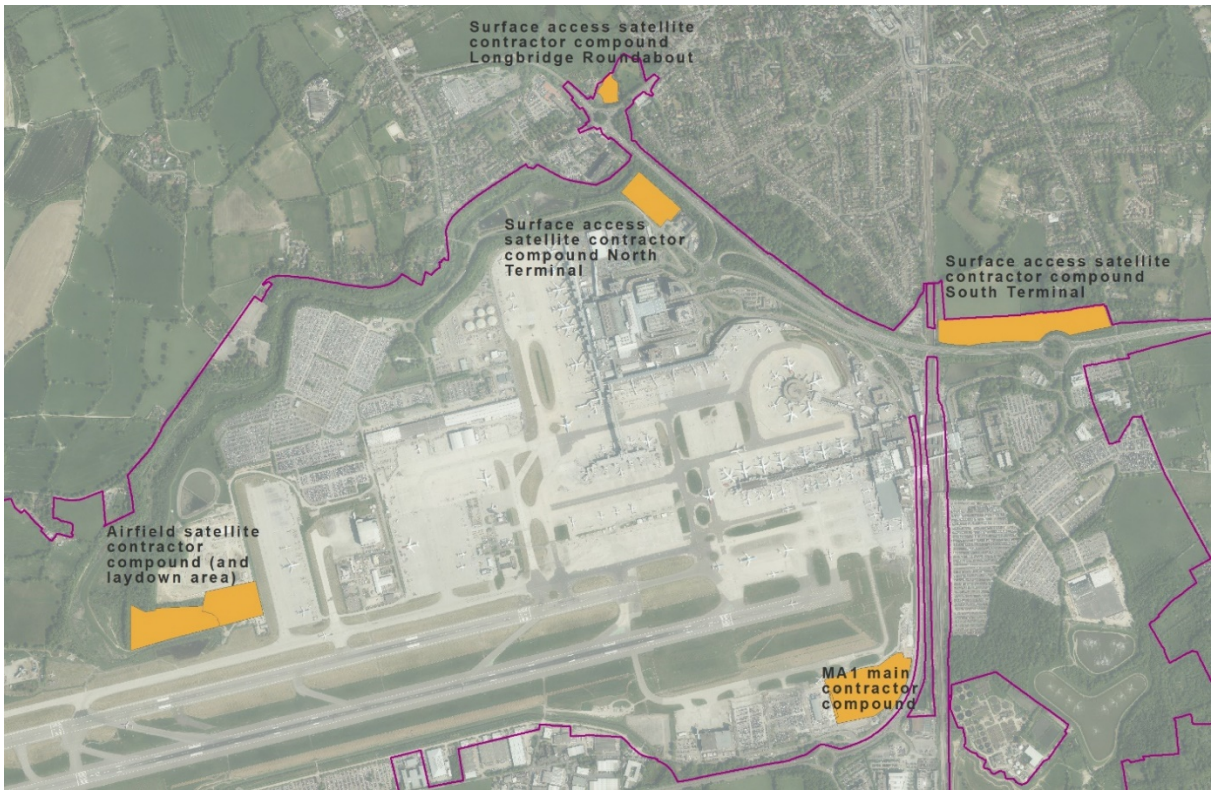
5.4.1 The precise locations of compounds would be determined by the Principal Contractors, however at this stage, we anticipate the following main/satellite compounds will be required (**see Figure 5.2.1f in the PEIR** and Figure 5.1 below):

- main contractor compound (known as MA1);
- main airfield satellite compound (and laydown area) plus smaller compounds located within the airfield boundary; and
- surface access satellite contractor compounds.

5.4.2 In addition, a number of smaller compounds would be associated with construction of each of the elements of the Project.

5.4.3 All construction compounds would be temporary and would be reinstated to their previous use following completion of construction works (in accordance with the indicative phasing set out in **Appendix 5.5.1 of the PEIR**).

Figure 5.1 : Principal Construction Compounds



Main contractor compound

5.4.4 The main contractor compound would be located in the south eastern part of the airport, to the west of the perimeter road. The compound would be securely fenced and is anticipated to accommodate:

- main office and welfare facility (including meeting room space, canteen/locker rooms and waste processing area);
- two large or three smaller asphalt and/or concrete batching plants, with associated bulk material storage and handling bays;
- airside processing facility for people, vehicles and materials;
- limited areas for material laydown and inspection;
- parking for contractor, project manager and supply chain vehicles; and
- contractor bus terminal.

5.4.5 The main compound is anticipated to occupy an area of approximately 5ha. The tallest elements within the main compound are expected to be components of the batching plants at a maximum of 30m above ground level. The location is anticipated to serve the majority of the daily construction workforce and the project management team.

5.4.6 It is likely that a new temporary access from the existing Perimeter Road East would be required to enable separation of construction traffic from the existing operational traffic.

Airfield satellite contractor compound

5.4.7 The satellite compound is anticipated to be to the west of Taxiway Uniform and south of the Boeing hangar. This compound would be securely fenced and is anticipated to accommodate:

- satellite office and welfare facility (including meeting room space, small canteen/locker rooms, waste processing area)
- one concrete batching plant, with associated bulk material storage and handling bays
- areas for material laydown and inspection
- parking for contractor, project manager and supply chain vehicles
- contractor bus terminal

5.4.8 The satellite compound is anticipated to occupy an area of approximately 6ha. The tallest elements within the compound are expected to be components of the batching plant at a maximum of 30m above ground level. The location is anticipated to serve airfield works, including the provision of a stockpile location for material to be stored and reused on site.

Surface access satellite contractor compounds

5.4.9 Satellite compounds for the construction of surface access improvements are anticipated to be required, including:

- a satellite compound to serve works to the South Terminal roundabout;
- a satellite compound serve works to the North Terminal roundabout; and
- areas for stockpiling and reprocessing areas.

South Terminal roundabout contractor compound

5.4.10 The compound to serve the works to the South Terminal roundabout would be securely fenced and is anticipated to accommodate:

- satellite office and welfare facility (including meeting room space, small canteen/locker rooms, waste processing area);

- bulk material storage and handling bays;
- limited areas for material laydown and inspection;
- parking for contractor, project manager and supply chain vehicles; and
- contractor bus terminal.

5.4.11 The South Terminal roundabout surface access satellite compound is proposed to the north of the South Terminal roundabout and Airport Way. The compound is anticipated to occupy an area of approximately 2ha. The tallest elements within the compound are expected to be up to 15 metres in height.

North Terminal roundabout contractor compound

5.4.12 The compound to serve the works to the North Terminal roundabout would be securely fenced and is anticipated to accommodate:

- satellite office and welfare facility (including meeting room space, small canteen/locker rooms, waste processing area);
- a batching plant;
- limited areas for short term material laydown and inspection;
- limited parking for contractor, project manager and supply chain vehicles; and
- contractor bus terminal.

5.4.13 The North Terminal roundabout surface access satellite compound is anticipated to occupy an area of approximately 1.6ha. The tallest elements within the compound are expected to be up to 15m in height.

Longbridge Roundabout Contractor Compound

5.4.14 The compound to serve the works to the Longbridge roundabout would be securely fenced and is anticipated to accommodate:

- satellite office and welfare facility (including meeting room space, small canteen/locker rooms, waste processing area);
- limited areas for short term material laydown and inspection;
- limited parking for contractor, project manager and supply chain vehicles; and
- drop-off/pick-up area for workforce minibus (if used).

5.4.15 The Longbridge roundabout satellite compound is anticipated to occupy an area of approximately 0.65 hectares. The tallest elements within the compound are expected to be up to 5 metres in height.

Restoration of temporary contractor compounds following cessation of works

5.4.16 All compounds are anticipated to cease use in 2035. Thereafter these compounds would be restored to their previous land uses.

5.5 Construction Logistics

Construction Logistics Consolidation Centre

5.5.1 A temporary logistics facility may be required in order to allow scheduling of deliveries to the appropriate work sites. This would comprise an existing secure fenced area, including a warehouse type facility with loading/unloading docks, secure airside screening area, material laydown area, HGV parking, electric vehicle charging stations, driver welfare facilities and some limited parking.

5.5.2 The use of a logistics facility would allow HGV deliveries to the airport to be consolidated, reducing the overall number of deliveries on the local road network.

5.5.3 If such a facility is required, it is likely that the location would be an existing facility, or a site with an existing consent for such use. At the current time, traffic modelling has assumed no consolidation centre would be in place, which represents a worst case in terms of total traffic numbers at the site access points. However, if a location is identified as being required as part of the final proposals, this will be assessed within the EIA process and included within the Environmental Statement.

Construction Working Hours

5.5.4 In order to maintain safety and minimise disruption to the operation of the airport, work in close proximity to existing runways and taxiways would require the closure of facilities as operationally necessary and hence are likely to be scheduled overnight.

5.5.5 During construction, the airport would continue to operate on a 24 hour, seven days per week basis. This would include use of the construction compounds and construction working areas on a daily 24-hour basis. It is acknowledged that the use of specified construction equipment and construction processes in sensitive locations, in close proximity to residential properties, and at noise sensitive times, may need to be subject to restrictions in relation to limits for operating noise levels, or other mitigation measures, as necessary and practicable.

5.5.6 Potential restrictions will be discussed with the relevant regulator.

5.5.7 Where necessary, and where possible, closures and lane restrictions on the highways network would be undertaken outside peak periods (in terms of traffic flow). To ease congestion on the public highways, deliveries of some materials and movement of workforce may require to be outside of standard daytime peak hours (e.g. overnight and at weekends).

Construction Workforce

5.5.8 It is anticipated that construction would require a workforce of up to approximately 1,300 personnel during peak periods.

Construction Access

5.5.9 All construction traffic would use Junction 9 of the M23, via the M23 spur and Airport Way and to access sites at the airport. Construction traffic would be monitored by our existing surface

transport operations team to ensure compliance with proposed routes, unless disruption causes these to be unavailable, in which case signed diversionary routes would be provided.

Construction Vehicles and Traffic Management

5.5.10 A traffic management strategy would be put in place during construction to minimise environmental effects. We have conducted an earthworks study which aims to retain as much material within the airport boundary as possible thereby significantly reducing the need to transport material off-airport, reducing the number of HGVs on the road. The traffic strategy would include the following.

- Measures to ensure the transport of construction materials and waste is managed as sustainably as possible noting the impacts of transporting this by road.
- Timing of construction material and logistics traffic movements that need to come by road to use roads and highways outside of peak periods and to use designated routes into construction sites on the airport which are suitable for this type of traffic.
- Use of Delivery Management Zones, where appropriate, to consolidate materials onto the least number of vehicles and to hold vehicles away from sensitive areas until deliveries are required.
- Measures to encourage the highest possible public transport use for the construction workforce. Time shift patterns such that those workers who need to come by road would be using roads and highways outside of peak periods.

Cut and Fill Strategy

5.5.11 The Project will produce arisings from excavations including those from airfield pavement areas. The objectives of the earthworks strategy are to maximise the re-use of material, to reduce the amount of material taken off site for disposal and to minimise vehicle movements as far as practicable.

5.5.12 One area within the Project site boundary has been identified as a spoil receptor site. This area at Pentagon Field is anticipated to accommodate approximately 245,000 m3 of material over the period 2024 to 2031. This would result in the creation of a flatter area with a revised ground level of approximately 63.5 metres AOD (an increase of between 0m up to 4.4 metres above the existing ground level, depending on the local topology of the site).

5.5.13 Concrete arising from demolition would be crushed on site for re-use. All materials excavated on site would be subject to tests to determine suitability for re-use. It is assumed at this stage that approximately 190,000 m^3 of cohesive material would require disposal to a licenced landfill site.

Drainage during Construction

5.5.14 Temporary drainage would be required during the construction phase to prevent a temporary increase in flood risk as a result of the works. As far as practicable, these would consist of Sustainable Drainage Systems (SuDS) features, such as swales and attenuation ponds, although some piped drainage and pumps may be required.

5.5.15 Temporary drainage would be installed in all construction areas not currently provided with drainage systems, and in areas where the construction works have potential to increase surface

water runoff, either due to ground compaction or reduction in surface permeability. The drainage would be designed to attenuate runoff rates in rainfall events up to the 1% (1 in 100) annual exceedance probability event to rates no higher than existing and to ensure any discharge to local watercourses or the existing drainage network is similarly attenuated. Suitable treatment would also be provided to manage the water quality of discharges to watercourses.

Construction Lighting

5.5.16 Lighting of the construction sites would be required to ensure that construction work is able to continue safely and effectively during the night-time works and other periods of insufficient natural light. This would include lighting to the construction compounds, working areas, storage and circulation areas and access points.

5.5.17 As far as possible, task lighting would be used for specific works to direct light towards the working areas during the night time. Such task lighting would be positioned at low level on posts and directed at the most frequently used areas of work.

5.5.18 Lighting for construction compounds and workforce areas would incorporate restricted upwards light spillage and energy efficient fittings. Checks would be carried out on a regular basis to ensure that lighting has not been repositioned.

5.5.19 Lighting guidelines for the construction period will be developed to identify the type of lighting to be used and measures to be implemented to reduce light spill, taking into account effects on nearby sensitive receptors and the safety of ongoing aircraft operations.

Construction Waste

5.5.20 Surveys would be undertaken prior to demolition of buildings and prior to disposal of materials from the construction site to identify any hazardous materials.

5.5.21 A waste strategy has been developed, identifying the key measures to be taken to avoid, reduce and manage waste during the construction phase.

5.5.22 The purpose of the waste strategy is to demonstrate how waste has been considered in terms of the design of the Project and sets out measures for managing waste during construction and operation. This strategy provides information on the measures for managing waste likely to be generated and details how the wastes would be managed to meet legislative and policy requirements. A draft Waste Strategy is provided at **Appendix 5.3.2 of the PEIR**.

6 The Need for Our Northern Runway Project

6.1 Introduction

6.1.1 The aviation industry has been particularly affected by the Covid-19 pandemic and, over the years has also been a focus of attention in the urgent need to address climate change. Whilst both issues are of global importance, neither affect the underlying case for continued investment in infrastructure to preserve and enhance international connectivity.

6.1.2 The Covid-19 pandemic had a devastating impact on the global aviation industry in 2020. Gatwick, along with all other UK airports, experienced a significant reduction in passenger traffic levels as a result of both Government imposed restrictions on air travel and reduced passenger demand, driven by low consumer confidence. UK passenger volumes in 2020 were 78% down on volumes for 2019. It is expected that Government travel restrictions will continue to have an impact on passenger demand and traffic levels throughout 2021, but that traffic levels will start to recover as Government restrictions ease.

6.1.3 While the immediate outlook therefore remains challenging, there is confidence across the aviation industry that passenger and airline demand at Gatwick will return to previous levels over the course of the next few years and then continue to grow thereafter.

6.1.4 Overall, updated forecasts predict that it will take approximately four to five years for passenger traffic at Gatwick to return to levels seen in 2019 and that by the end of the 2020s, passenger levels at Gatwick will have returned broadly to where they would have been had the pandemic not occurred. This reflects the inherent strength of demand for air travel generally, but particularly at Gatwick, and the constraints on airport capacity in London and the South-East.

6.1.5 Government policy has consistently recognised the importance of aviation. The most recent expression of policy is set out in the Transport Decarbonisation Plan, published by the Department for Transport in July 2021 in which the Government explains:

"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."

6.1.6 Also, in July 2021, the Department for Transport published '*Jet Zero Consultation, A consultation on our strategy for net zero aviation'* which explains the Government's absolute commitment to decarbonise the aviation sector whilst continuing to benefit from the connectivity, jobs and economic benefits it provides. The aim of the strategy is for aviation "*to decarbonise in a way that preserves the benefits of air travel and delivers clean growth of the UK sector by maximising the opportunities that decarbonisation can bring*".

6.1.7 These publications bring the aviation debate up to date and they also explicitly confirm that the Government remains committed to support and enhance the aviation sector as a key component of the UK economy in view of the critical contribution it makes. In doing so, the Government has

confirmed that its existing planning polices for aviation continue to have "*full effect*". [15]

6.1.8 Those policies include a commitment to growth to respond to forecast increases in demand and to strengthen the aviation sector and the contribution it makes to a number of Government policy objectives. Whilst future levels of growth are necessarily uncertain, as explained further below, there is a particular case to enhance capacity at Gatwick airport.

6.1.9 This chapter sets out the context of forecast demand generally before considering our specific case for expansion at Gatwick.

6.2 UK Aviation Demand

6.2.1 Government policy on airports and aviation over the years has consistently recognised that aviation has long been at the heart of the UK's economic success. In 2019, the UK had the largest aviation network in Europe and the third largest in the world. Prior to the Covid-19 pandemic, the UK's aviation industry contributed at least £22 billion per annum to the UK economy, along with over 230,000 jobs[16]. Pre-pandemic, aviation was also growing at a rapid rate to meet rising demand with passenger numbers having increased for seven consecutive years.

6.2.2 The need for increased capacity in the sector is well established and long overdue. In September 2012, the Coalition Government established the Independent Airports Commission to examine the scale and timing of any requirement for additional capacity to maintain the UK's 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.

6.2.3 The work of the Airports Commission informed the development of aviation planning policy, the details of which are examined in **Chapter 2 of the PEIR**. In particular, the Government designated the Airports National Policy Statement in 2018 (the ANPS)[17]. The ANPS explained the importance of the aviation sector to the UK economy, as follows:

"International connectivity, underpinned by strong airports and airlines, is important to the success of the UK economy. It is essential to allow domestic and foreign companies to access existing and new markets, and to help deliver trade and investment, linking us to valuable international markets and ensuring that the UK is open for business. It facilitates trade in goods and services, enables the movement of workers and tourists, and drives business innovation and investment, being particularly important for many of the fastest growing sectors of the economy."

6.2.4 The ANPS is clear on the need for new airport capacity in the south east; paragraph 2.12 states that:

[15] Jet Zero Consultation page 51.
[16] Foreword, Aviation 2050 : The future of UK aviation - A consultation (December 2018)
[17] Department for Transport : Airports National Policy Statement : New Runway Capacity and Infrastructure at airports in the south-east of England (June 2018)

'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.'

6.2.5 The ANPS recognises that the UK's hub status is already being challenged by restricted connectivity, whilst airports in Europe have spare capacity. Paragraphs 2.14 -2.16 of the ANPS state that:

"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. International connectivity will be restricted as capacity restrictions mean airlines prioritise their routes, seeking to maximise their profits. Capacity constraints therefore lead to trade-offs in destinations, and while there is scope to respond to changing demand patterns, this necessarily comes at the expense of other connections. Domestic connectivity into the largest London airports will also decline as competition for slots encourages airlines to prioritise more profitable routes.

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."

6.2.6 The policy position is more fully explained in **Chapter 2 of the PEIR** which sets out the Government's consistent policy support for more airport capacity in the south east through both the construction of a third runway at Heathrow, and the need to make best use of infrastructure at other airports.

6.2.7 UK airports handled a record 300 million passengers in 2019, of which the London airports accounted for 181 million or 60% of the total activity. Demand in the London system has been subject to strong growth, with over 34 million passengers added in the five-year period to 2019.

6.2.8 The latest demand forecasts from the Department for Transport (2017) predicted continued growth in demand of around 1.7% per annum in the long term (2016-2050). This period was forecast to see demand increase by an additional 230 million passengers across the UK's airports.

6.2.9 Recent short-term performance pre-Covid-19 has already outperformed the Department for Transport's projection. Annual growth rates between 2016 and 2019 were stronger than forecast (3.4%) resulting in demand already being at least 1 year ahead of the Department for Transport's central case forecast.

6.2.10 It is widely recognised that airports in London and the South East of England are increasingly facing longer term capacity issues and, even with a third runway at Heathrow being taken into

account, the Department for Transport forecasts show that demand will outstrip capacity in the London airports system by the mid-2030s.

6.2.11 The forecasts observe that Heathrow and Gatwick are already 'full', whilst Luton is operating close to its planning limit. By 2030, an additional 50 million+ passengers are forecast in the London market - far in excess of today's available capacity, indicating significant need for capacity development.

6.2.12 There are clearly significant levels of 'pent-up' demand expected in the future and passengers who will want to fly from the London airports might not be able to do so. This means that they would have to find alternatives, which may include not flying or potentially travelling further to another airport or using another mode of transport if it is available. Should demand continue to outgrow the latest forecasts, these levels of 'spill' are forecast to be reached several years earlier. Clearly with such levels of spill/lost demand now being forecast, it is important that other airports, including us at Gatwick, find ways to make best use of our available capacity.

6.2.13 Further details of forecast growth are set out in the **Forecast Data Book** provided as **Appendix 4.3.1 of the PEIR**, however the summary above sets the context within which our specific need for expansion at Gatwick should be considered.

6.3 Growth at Gatwick Airport

6.3.1 Despite peak capacity constraints, we have seen significant levels of growth in the recent years, prior to the Covid-19 pandemic. Over the last decade, we have grown by over 14 million passengers reaching 46.6 million in the most recent full year of operations (2019). This represents a 44% growth in passengers since 2009, resulting from 15% growth in commercial air transport movements combined with the use of larger and fuller aircraft.

6.3.2 During this period, domestic volumes remained relatively flat, whilst over 10 million and 4 million passengers were added in the short haul and long-haul market categories respectively. The growth in short haul markets has been driven by the continued expansion of low cost carriers, who account for a significant share of growth in the European aviation market. Long haul growth has been driven by many new intercontinental and business destinations being added by a range of carriers as Gatwick continues to expand its long-haul connectivity.

6.3.3 Growth at Gatwick has consistently outstripped Department for Transport forecasts. In 2013, the Department for Transport forecast that Gatwick would accommodate 34 million passengers by 2017 whereas over 40 million passengers were actually handled in that year. The Department for Transport's updated 2017 forecast continues to underestimate passenger demand at Gatwick, suggesting 45 million passengers would be reached by 2030 – a figure which was exceeded in 2017/18.

Our Forecasts

6.4.1 In preparing our 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 our growth, some of which, such as noise, traffic and carbon, rely heavily on the forecasts, are not understated. This also accords with advice from the Planning Inspectorate to ensure that realistic 'worst case' environmental impacts are understood. For this reason, the forecasts presented are considered to represent a robust and realistic view of the

level of traffic growth but are likely to be towards the upper end of the levels of growth that could occur at Gatwick in both the Baseline Case and with the Project.

6.4.2 Our forecasts also assume that that the existing controls on night flying at Gatwick will continue to be carried forward, with no changes to the current regime. This assumption aligns with the Government's most recent decision following public consultation, to maintain existing night flight restrictions at Gatwick from the period 2022 to 2025.[18]

6.4.3 For the purposes of forecasting our air traffic growth at Gatwick, two scenarios (or cases) have been formulated.

- **Existing Runway Case –** assumes continued growth of Gatwick Airport based on continued use of our existing main runway (referred to as the **'Baseline'** or **'Base' Case**)

  This case assumes that Heathrow R3 does not come forward.

- **Northern Runway Development Case –** making best use of our two existing runways by bringing our existing northern (standby) runway into operation alongside the existing main runway and operating the two runways simultaneously (referred to as the **'Northern Runway' Case**)

  This case assumes that Heathrow R3 does not come forward and the Northern Runway Project opens in 2029.

6.4.4 The Baseline Case represents the airport as it is expected to develop if development consent is not granted for our Northern Runway Project. In this case, some further growth in airport passengers and air transport movements would still occur in the years ahead on the existing runway, but not as much growth as would occur under the Northern Runway Case.

6.4.5 In respect of each of these two cases, forecasts have been prepared for four primary assessment years - 2029, 2032, 2038 and 2047. These are used in our preliminary environmental impact assessment work which we report on in later chapters of this document and which are reported in detail in the PEIR:

- **2029:** represents the opening year of the proposed Northern Runway Project and therefore the first point at which effects arising from its operation would occur.
- **2032:** is an interim assessment year.
- **2038:** representing the year in which the development works proposed in the northern runway project would be completed.
- **2047:** to meet a specific requirement of guidance in the Design Manual for Roads and Bridges (DMRB) to assess impacts 15 years after the last of the key highways works associated with the northern runway project are due to be completed.

6.4.6 The PEIR assessment concentrates on the period 2029 to 2038, with modelling topics modelling 2029, 2032 and 2038 as the primary assessment years. In addition, for some topics it is a requirement to assess the effects of the highway's improvements 15 years after completion.

[18] https://www.gov.uk/government/consultations/night-flight-restrictions-at-heathrow-gatwick-and-stansted-airports-between-2022-and-2024-plus-future-night-flight-policy

Therefore, for these topics, an assessment is provided for 2047. Therefore, forecasts for 2047 are included in the **Forecast Data Book.**

6.4.7 During discussions with stakeholders, Gatwick has been asked about the implications of the Northern Runway Project passenger and air transport movements numbers (and therefore environmental effects) if Heathrow's third runway project did proceed. Gatwick will consider the implications should a third runway at Heathrow proceed in our next stage of work.

6.4.8 Further details of forecast growth, and the factors that underlie it, are provided in **Chapter 4 of the PEIR** and the **Forecast Data Book.** At present, our forecasts assume that a third runway at Heathrow is not brought forward. However, in the next stage of our work, we will consider the implications should a third runway at Heathrow proceed. This approach will enable us to test the 'worst case' environmental impacts but also demonstrate that the need for additional capacity at Gatwick is not dependent upon whether or not the third runway at Heathrow proceeds.

Future Gatwick Growth Forecast

6.4.9 During 2019, we were the fullest we have ever been with our single runway accommodating the following:

- total passengers: 46.6 million;
- commercial air transport movements: 283,000; and
- total cargo: 150,000 tonnes.

6.4.10 It is predicted that by 2038, passenger throughput in the absence of the Project would increase to approximately 62.4 million passengers per annum and 67.2 million passengers by 2047. This is influenced by three main factors.

- Growth in runway utilisation in off-peak periods: whilst GAL is anticipating only minor changes in the number of daily aircraft movements during current peak summer months (July to September), during the off-peak periods – the shoulder months of summer (April to June and October) and in the winter months (November to March) – the number of daily aircraft movements is expected to increase by a greater amount than in the peak months.
- Up-gauging of aircraft fleets to larger aircraft: reflecting the trend for airlines to update their fleets with larger aircraft and/or reconfigured cabins with more seats.
- Increased load factors: an increase in the average occupancy levels of flights.

6.4.11 Despite a seemingly positive outlook, this level of forecast growth in the absence of the Project represents a 3% decline in Gatwick's share of the UK south east aviation market from 26% of the market in 2019 to 23% in 2047 (**Appendix 4.3.1 of the PEIR** - Table 8.2.1) – a decline driven by the severe constraints on capacity at the airport.

6.4.12 The Project would enhance Gatwick's capacity, enabling the airport to respond to demand within its catchment. With the Project, through the early 2030s, Gatwick is forecast to grow towards 70 million passengers, reaching 75.6 million by 2038 and 80.2 million passengers by 2047; 13.2 million more passengers than would be the case without the Project. This growth would see Gatwick capturing a greater share of London demand as other airports will have relatively limited capacity to grow further.

6.4.13 Our northern runway project will deliver additional capacity in 2029, catering for a combination or

both long and short-haul demand alongside a range of airline and business models. We are the only airport in the South East to offer such a mix of airline traffic that is matched to the future market outlook and demand forecasts.

6.4.14 The economic benefits of our expansion are analysed in the **Economic Impact Report** prepared by consultants Oxera (2021) submitted with this consultation and are summarised in Chapter 7 of this document.

6.5 The Need for Additional Capacity at Gatwick

6.5.1 In 2019, we handled some 283,000 Air Transport Movements (ATMs), serving some 46.6m passengers travelling to 228 destinations with 53 different airlines. Until 2017, Gatwick had the world's busiest single runway (55 aircraft movements per hour) [19], and still has the world's busiest single runway operation during the day.

6.5.2 This intensity of operation brings particular challenges. With a declared runway capacity of up to 55 movements per hour, Gatwick can process an aircraft approximately every minute. That sustained intensity is greater than any other runway and it is forecast to increase. For the total summer season (April-October), daily commercial ATMs are forecast to increase 7% from an average of 851 in 2019 to 915 in 2038 and to 927 in 2047.

6.5.3 Whilst the forecasts 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". This was recognised as long ago as 2013 by the Airports Commission, whose interim report recorded:

"Gatwick operates at over 85% capacity over the course of the year and above 90% in the summer peak season. Almost no take-off or landing slots are un-used in the busiest hours of the day." (Airports Commission Interim Report 2013, paragraph 3.55).

"Gatwick is operating at more than 85% of its maximum capacity and is completely full at peak times. It is becoming increasingly difficult for airports and airlines to operate efficiently within the constraints of existing infrastructure". (Airports Commission Interim Report 2013, paragraph 20).

6.5.4 Since that analysis, throughput at Gatwick has grown by 8.5 million passengers, more than any other UK airport (see **Forecast Data Book**).

6.5.5 Figure 6.1 and 6.2 below demonstrate that this intensity of activity is sustained throughout the majority of the day and is a feature of the airport for much of the year.

[19] In 2018, Mumbai International Airport created a new world record for single-runway operations handling 980 arrivals and takeoffs in 24 hours

Figure 6.1 : Slot Allocation Summary

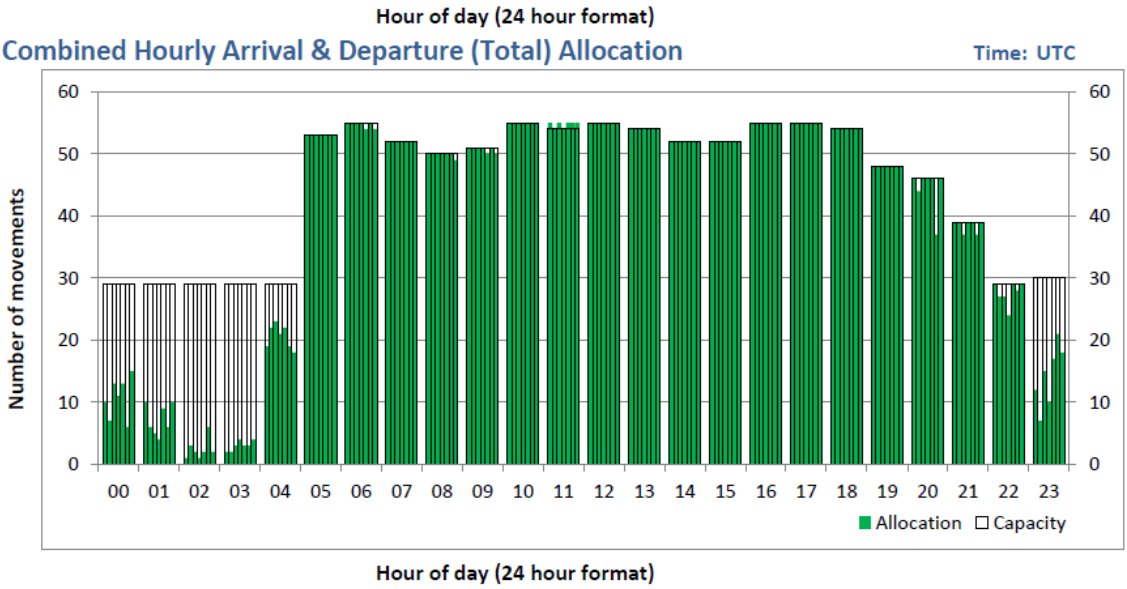
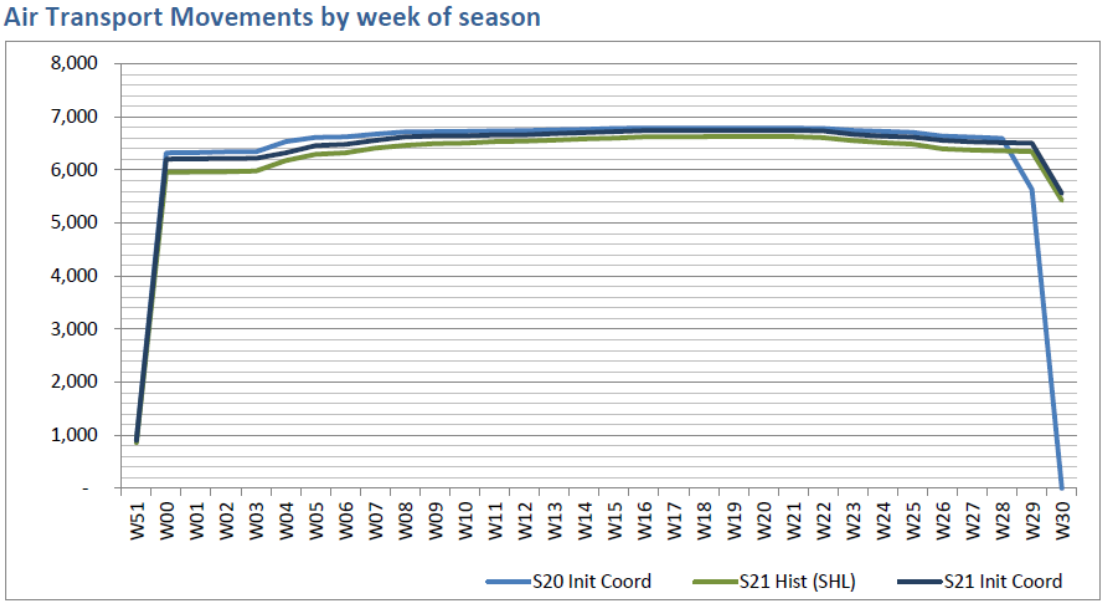


Figure 6.2 : ATMs by week of season (Full Season – Seasonality)



6.5.6 A key benefit of the Project is enhanced operational resilience, particularly the ability for the airport to recover from unexpected events. Appendix A3 of the **Economic Impact Report** (Oxera, 2021) submitted with this consultation demonstrates that we suffer greater than average delays from scheduled flight times than any other UK airport, with obvious consequences for airlines and businesses.

6.5.7 Airports publish key performance indicator data which allows comparisons to be made with other airports[20]. The data demonstrates the following.

- Aircraft taxi times for departures at Gatwick (at more than 19 minutes) are comparable to Heathrow, despite the size of the airport;
  - On the opening of the Project, these are forecast to reduce by 33%.
- On average planes are held at the runway pending departure for more than 7 minutes;
  - the increased capacity from the Project would reduce this by 43%.
- Delays in runway availability cause arriving planes to take longer routes or adopt airborne holding patterns;
  - these could be reduced by at least 25% if the northern runway were available for use.

6.5.8 These are average conditions but operating consistently with a full schedule also means that the airport can struggle to recover from routine but unplanned events or from more serious incidents. Recovery capacity is a key indicator of airport resilience and an inability to recover quickly from disruption can have disproportionate effects on airlines, passengers and airport staff. It can also impact on the local community as planes run late or adopt holding patterns for longer. We estimate that the airport would be able to recover three times more quickly from disruption if the northern runway was made available – for example, to enable dual runway operations to allow delayed departures to get away and free up the main runway for arrivals. The northern runway would:

- reduce the intensity of main runway operations to an average of 48 movements per hour;
- maintain continuity of operations, even if one runway is temporarily out of use, avoiding the current loss of time in switching to the standby runway;
- improve capacity at the busiest times by removing smaller (Code C) aircraft departures from the main runway;
- reduce taxi times and airborne holding times; and,
- reduce the risk of delay and time overruns to the benefit of passengers, airlines and the local community.

6.5.9 The availability of the northern runway would also enable the release of additional slots to meet pent up demand. This would drive connectivity, offer passengers a wider choice of destinations and create competition with consequential benefits to air fares.

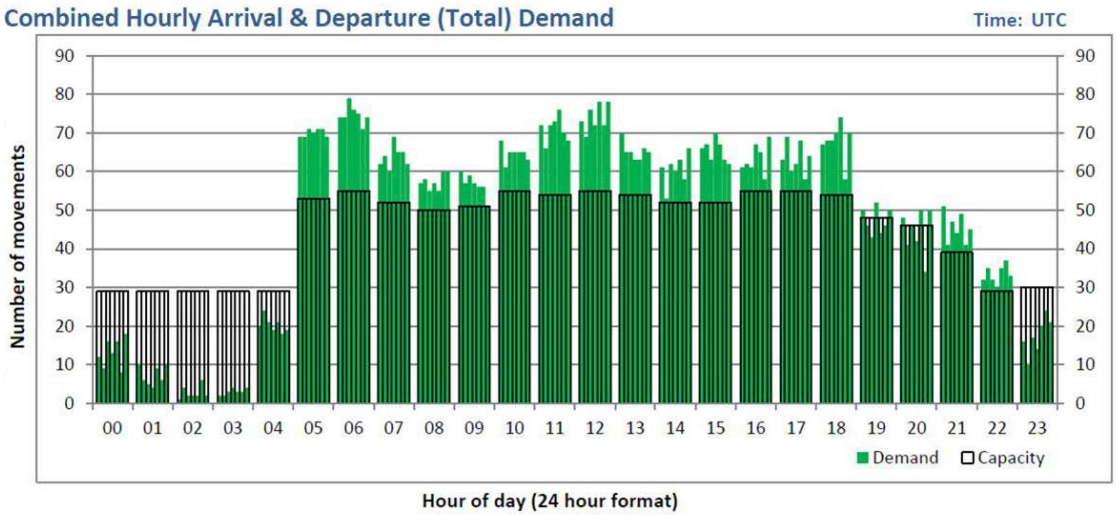
6.5.10 Airport Coordination Limited (ACL), who are appointed to co-ordinate arrival and departure slots at Gatwick report that demand for runway slots exceeds capacity at peak times:

"*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 2021; executive summary)

[20] Eurocontrol coda data for 2018.

6.5.11 This is illustrated in Figure 6.3 below which is extracted from the ACL report:

Figure 6.3 : Slot Application Summary



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

6.5.12 There are several consequences of demand outstripping capacity, as described below.

- As we have become increasingly constrained, a secondary market for slots has started to emerge. The first significant 'trade' occurred when Flybe sold most of their Gatwick slot portfolio to easyJet in 2012. 25 slot pairs were exchanged for an average of £0.8m per pair. In the last few years, the values attached to Gatwick slots increased significantly, valuing them at around £3m per pair. These costs are inevitably passed on to passengers.

- Demand cannot be satisfied. Competition for the ex-Thomas Cook slots in 2018 was fierce with interest from easyJet, Wizz Air, IAG, TUI and other reported bidders. By definition, with current capacity constraints demand is turned away and this includes opportunities for increased competition and, an increased range of destinations.

- We continue to be actively engaged by airlines around the world seeking to access our unique and large catchment. For commercial reasons, many of these airlines, from all continents, remain confidential however, recent applicants for slots at Gatwick include:

  - existing airlines seeking to grow both short haul (e.g. Wizz, Ryanair, easyJet, Turkish Airlines, Vueling) and long haul (eg China Eastern, WestJet)
  - new airlines seeking to enter the Gatwick market (eg. SunExpress, SAS, Alitalia) and long haul (eg China Southern to China, Vistara to India, JetBlue to USA).

- Where demand can be satisfied, the addition of new services adds to consumer choice and drives competition. Recent examples which increased competition, encouraged reduced ticket prices and enable new opportunities include WestJet launching operations to up to six Canadian cities growing the London-Canada market.

6.5.13 Addressing these issues and enabling this increase in capacity, competition and international connectivity is directly consistent with long held and recently restated Government policy.

6.5.14 Government policy has been consistently supportive over the last 20 years of making the best use of existing capacity at UK airports to improve performance, resilience and the passenger experience as a sustainable and balanced approach to meeting capacity demand. Our Project is a direct and sustainable response to meeting known and future expected demand at Gatwick but also within the London and wider south east regions.

6.6 Cargo

6.6.1 High level annual cargo forecasts have been prepared considering our evolving traffic mix. Future growth in cargo tonnage is linked to supply side assumptions around the carrier and market types being served. We see long-haul, widebody movements to markets such as Asia and the Middle East as providing significant opportunity.

6.6.2 Our 2019/20 results show that we carried 150,000 tonnes. Under the Northern Runway scenario, cargo tonnages are forecast to increase to over 200,000 tonnes as the northern runway enters service in 2029. Beyond this, they grow steadily to over 320,000 tonnes by 2038 primarily through increased long-haul connectivity offered by the additional runway capacity. By 2047, cargo tonnages are forecast to be approaching 350,000 tonnes per year.

7 The Economic Benefits of Our Northern Runway Project

7.1 Introduction

7.1.1 Gatwick Airport provides significant value to the economy and stimulates local and regional growth through activity on site, in supply chains to the airport, and from other businesses locating in the region because of the opportunities and connectivity offered. In 2019, Gatwick generated £7.5 billion to the local and regional economy and supported 121,400 jobs in the region. Overall, Gatwick contributed £8.3 billion to the UK economy and supported over 135,000 jobs nationally in 2019.

7.2 Economic Assessment of the Northern Runway Project

7.2.1 By enabling dual runway operations, the Project would significantly expand the airport's capacity and in turn enable additional aircraft movements through it and the London aviation system. The use of this additional capacity by passengers and airlines would have economic impacts at national, regional and local levels.

7.2.2 We commissioned Oxera Consulting LLP, a leading international economic consultancy, to undertake a preliminary assessment of these economic impacts. Their **Economic Impact Report** is provided as a stand-alone document as part of our consultation.

7.2.3 The assessment comprises:

- an assessment of the economic effects of the project at a local and regional level, including the jobs that the Project would generate;
- a national economic assessment in accordance with Government Web Transport Appraisal Guidance. This quantifies the economic benefits of the Project to passengers, airlines and airports from the increased capacity and therefore national and international connectivity the Project would bring; and
- consideration of other economic benefits including from tourism, increased freight, trade and inward investment and the increased resilience the Project offers in the event of unexpected disruption.

7.2.4 This Chapter summarises the findings of the assessment.

7.2.5 In summary the Project will deliver significant local and regional economic and social benefits, in particular through new jobs, economic growth, expenditure, supply chain opportunities and through the airport's stimulus for inward investment.

7.2.6 Additional jobs generated by the Project are expected to increase overall employment and generate additional value. In the local and regional area, the Project would generate 18,400

additional jobs by 2038 and £1.5bn in GVA (Gross Value Added[21]) in that same year.

7.2.7 Section 7.3 below provides further information on the extent and geographic distribution of these local and regional economic benefits as well as construction jobs.

7.2.8 In addition, the Project would have significant benefits at the national level through its impact on aviation markets and the wider economy. It will contribute positively towards meeting the national and regional demand for aviation growth and would have a significantly positive social impact and Net Present Value (NPV) over the 60-year appraisal period, within the range of £10.5bn to £22.0bn. This is comparable to the NPV of Crossrail[22]. This national economic impact assessment is summarised in Section 7.4 below.

7.3 Local and Regional Economic Impacts

Introduction

7.3.1 Gatwick Airport is the biggest single driver of economic growth in the region. In 2019, the airport generated £7.5 billion in GVA and supported 121,400 jobs in the region, while spending over £100 million with local and regional suppliers. Our supply chain and business opportunities spread throughout the wider South-East region and across the UK as a whole. Gatwick plays a significant role in local employment, providing valuable job opportunities within our region, and attracting a range of businesses to the area, including headquarters for a number of international companies.

7.3.2 Prior to the pandemic, a total of 24,000 people worked across the whole airport campus. GAL alone employed more than 3,000 people directly. In 2020, with the prevailing pandemic conditions, the number of GAL staff fell to approximately 1,900, although this is expected to increase in line with recovering passenger numbers in the coming years.

7.3.3 In the Gatwick Diamond area, research has shown that Gatwick supports one in every 12 jobs in this crucial region.

Assessment of Impacts

7.3.4 For the local and regional economic assessment, Oxera have assessed economic impacts on three areas around Gatwick:

- **The Gatwick Diamond** – comprising a recognised economic area, centred on Gatwick and covering the seven Local Authority Districts that surround the airport (Crawley, Mole Valley, Reigate and Banstead, Tandridge, Mid Sussex, Horsham and Epsom and Ewell).

- **The Coast to Capital Local Enterprise Partnership (LEP) area** – comprising the wider LEP region and including the Local Authority Districts of Epsom and Ewell, Mole Valley,

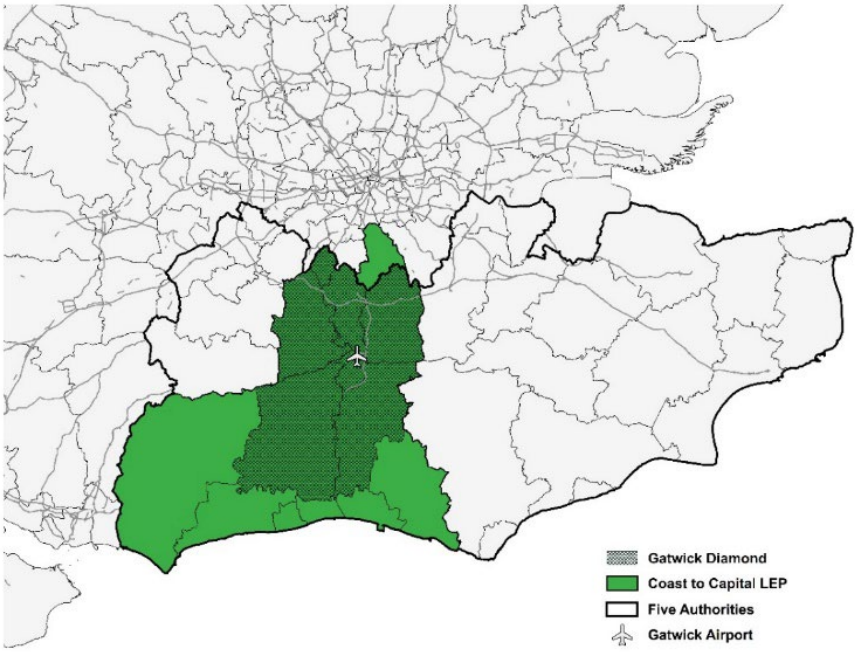
[21] GVA is a standard measure of economic activity that statistical agencies (such as the Office for National Statistics—ONS, and Eurostat) routinely use to ascertain an industry's contribution to an economy's total output
[22] This was quantified at £12.3bn in 2010 prices and values (Oxera 2013)

Reigate and Banstead, Tandridge, Crawley, Mid Sussex, Horsham, Croydon, Brighton and Hove, Lewes, Worthing, Arun, Chichester and Adur.

- **The 'Five Authorities' Study Area** – a larger sub-regional area comprising the County Councils of West Sussex, East Sussex, Surrey and Kent, and Brighton and Hove Unitary authority (the London Borough of Croydon is not included in this area).

7.3.5 These areas are illustrated in Figure 7.1 below and are consistent with the areas modelled under the Gatwick Airport Master Plan.

Figure 7.1: Map of local and regional study areas



Note: The Gatwick Diamond and Coast to Capital LEP both represent existing, defined geographies surrounding the airport. The Five Authorities area is made up of five local and unitary authorities surrounding Gatwick Airport: West Sussex, East Sussex, Surrey, Kent, and Brighton and Hove.

Overview of the Local and Regional Economic Context

7.3.6 The economic data suggests that prior to the onset of the COVID pandemic, the economy around the airport had been performing relatively well when compared with the rest of England. This was particularly true of the Gatwick Diamond and the Coast to Capital LEP (the Five Authorities area is more diverse, which is consistent with the larger area covered).

7.3.7 Nevertheless, there are areas of opportunity where the Project would be a catalyst for development and improved economic performance, including:

- particular areas of higher deprivation such as in parts of Crawley, Croydon, and Brighton and Hove – all of which are well connected to Gatwick;
- specific groups of the workforce where unemployment is higher, such as sales and customer service workers – job types that are well matched to a number of the job opportunities at Gatwick.

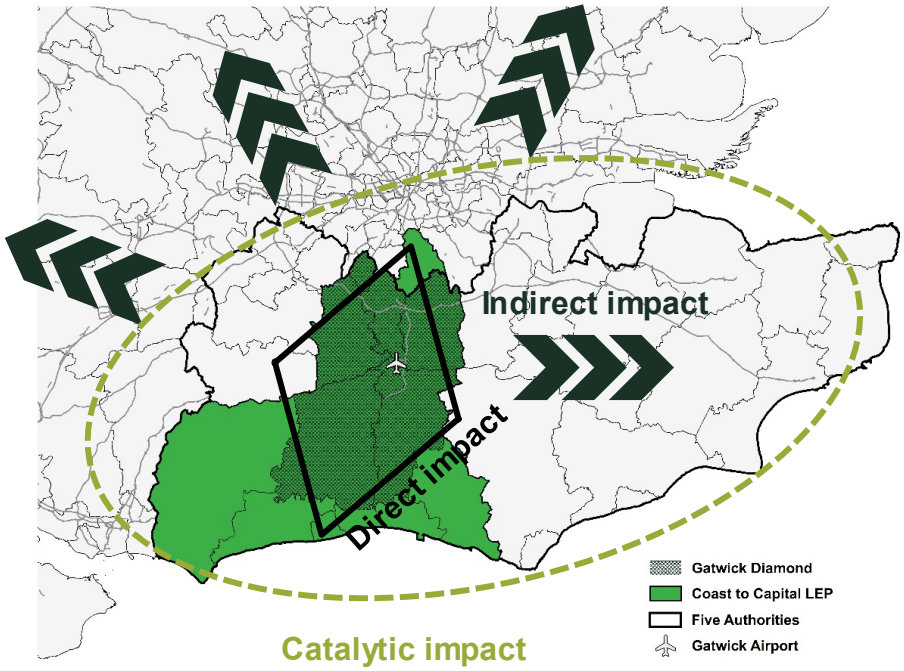
Local and Regional Impact of the Project

7.3.8 The Project will have economic impacts on the local and regional areas by creating jobs on site at Gatwick Airport ('direct impact'), supporting employment and economic activity through supply chains ('indirect impact'), and attracting businesses into the area to exploit the business opportunities that the Project will offer ('catalytic impact'). It will also have broader impacts on the labour market by increasing productivity and expanding the labour supply. The total economic activity associated with the Project has been measured on the following basis:

- **The direct footprint** measures the economic activity of businesses located on the Gatwick Airport site.
- **The indirect footprint** reflects activity in the supply chains of the firms located at Gatwick Airport. An increase in activity at the airport will require additional inputs from the supply chains of businesses at the airport, stimulating activity elsewhere. This activity will be more dispersed, but much of it will remain in the local/regional area.
- **The catalytic footprint** represents the activity of firms relocating to the area or expanding in order to take advantage of the enhanced business opportunities and connectivity offered by the airport following its expansion.

7.3.9 Figure 7.2 illustrates the geographic reach of each impact: direct impacts are at the airport and are therefore wholly within the Gatwick Diamond; indirect impacts cover the whole of the UK, since Gatwick suppliers can be located anywhere in the country or abroad; and catalytic impacts are located in the wider study area, since they are related to the connectivity that the airport provides in the local and regional area.

Figure 7.2: Geography of economic footprint impacts



Direct Employment Footprint and Value

7.3.10 The Project enables us to increase our overall capacity and to increase passenger and aircraft movements. This extra capacity and air traffic would translate into an increase in employment onsite at Gatwick driven both from GAL itself and from other companies based at the airport.

7.3.11 Total jobs at the airport would increase from the pre-Covid level of 24,000 to 32,000 in 2038 (with 3,200 of these jobs generated by the Project over and above the projected baseline footprint).

7.3.12 Table 7.1 shows the incremental direct economic effect of the Project. In addition to the baseline, the Project would generate a further 1,000 jobs in 2029, rising to 3,200 jobs in 2038. Adding in projections for employment growth by 2038 without the Project (around 28,800 jobs), a total of just under 32,000 jobs would be on-site in 2038. The GVA footprint of the Project alone would rise from £75 million in 2029 to £284 million in 2038. This would mean that by 2038, the total direct GVA of the airport (including the projected baseline) would be over £2.8 billion.

Table 7.1: The Project's direct footprint 2029 to 2047

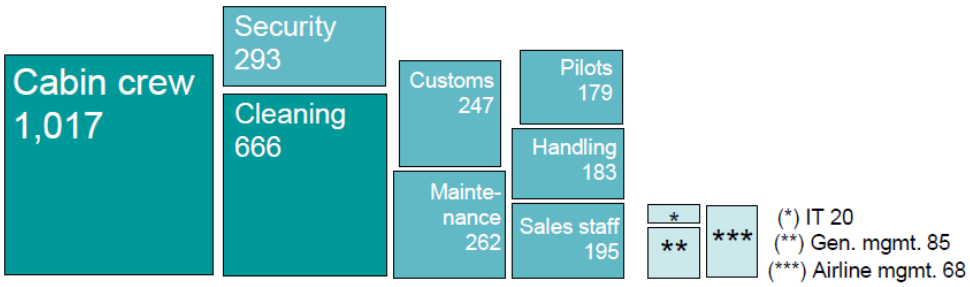
	2029	2032	2038	2047
GVA footprint (£m)	75	249	284	324
Employment footprint	1,000	3,100	3,200	3,100

7.3.13 The additional 3,200 direct jobs generated by the Project in 2038 are forecast to be in a range of occupational categories as shown in Figure 7.3. Just over 50% of jobs created would be higher and semi-skilled jobs. The higher and semi-skilled jobs would include pilots; air traffic controllers and flight operations staff; customs, immigration, police and fire staff; and information technology roles. Lower skilled roles include apron, ramp, cargo, baggage handling and drivers; catering, cleaning and housekeeping; maintenance roles; passenger service, sales and clerical; and security roles.

7.3.14 An examination of unemployment claimant count records for the Gatwick Diamond shows that the types of jobs provided are well matched to the skills sets and sought after occupations of those seeking work[23].

[23] For example, in 2019, 58% of Jobseeker's Allowance claimants in the Gatwick Diamond were seeking jobs in sales and customer service occupations

Figure 7.3: Types of direct employment that would be generated by the Project (2038)



Indirect Employment Footprint and Value

7.3.15 When the activity of firms located on the airport campus increases as a result of the Project, so does supply-chain spending, which translates into a higher indirect footprint.

7.3.16 Table 7.2 shows the additional effect of the Project on the indirect footprint of Gatwick Airport. By 2038, an additional 6,300 indirect jobs in the supply chain would be generated by the Project. The majority of these jobs would be within the region; 4,400 of these would be in the Five Authorities study area, a further 300 would be in Croydon, whilst the remaining 1,600 would be across the rest of the UK. The indirect GVA footprint generated by the Project would rise from £130 million in 2029, to £492 million in 2038. This would mean that by 2038, the total indirect UK-wide GVA footprint of the airport would be £4.8 billion, and the airport would support 62,400 indirect jobs nationally. Within the Five Authorities study area, the total indirect footprint of the airport would be £3.4 billion in GVA and 43,500 indirect regional jobs in 2038.

Table 7.2: The Project's indirect footprint (2029 to 2047)

	2029	2032	2038	2047
Indirect GVA (£m)	**130**	**431**	**492**	**563**
of which Gatwick Diamond	31	103	118	135
of which Coast to Capital LEP	49	163	185	212
of which Five Authorities	91	301	343	392
of which the rest of the UK	34	113	129	148
Indirect employment	**1,900**	**6,100**	**6,300**	**6,000**
of which Gatwick Diamond	500	1,500	1,500	1,400
of which Coast to Capital LEP	700	2,300	2,400	2,300
of which Five Authorities	1,300	4,200	4,400	4,200
of which the rest of the UK	500	1,600	1,600	1,600

Catalytic Employment Footprint and Value

7.3.17 Table 7.3 below shows the additional catalytic impact generated by the Project, which would total £848 million GVA in 2038 and generate 10,800 jobs across the whole Five Authorities area within businesses that expand or locate in the region because of the connectivity and opportunities offered by Gatwick Airport. This compares to £260m GVA and 3,800 jobs in 2029.

7.3.18 The catalytic footprint of the Project is concentrated in areas closer to the airport. As a result, the catalytic impact of the Project, within the Coast to Capital LEP and Five Authorities areas is the same. The total catalytic footprint of the airport in 2038 (including the projected baseline and the incremental benefit of the Project) would therefore total over £5.3 billion, and catalytic employment would reach 68,700 jobs.

Table 7.3: The Project's catalytic footprint (2029 to 2047)

	2029	2032	2038	2047
Catalytic GVA (£m)	**260**	**820**	**848**	**918**
of which Gatwick Diamond	150	472	487	527
of which Coast to Capital LEP	260	820	848	918
of which Five Authorities area	260	820	848	918
Catalytic employment	**3,800**	**11,600**	**10,800**	**9,900**
of which Gatwick Diamond	2,200	6,700	6,200	5,700
of which Coast to Capital LEP	3,800	11,600	10,800	9,900
of which Five Authorities area	3,800	11,600	10,800	9,900

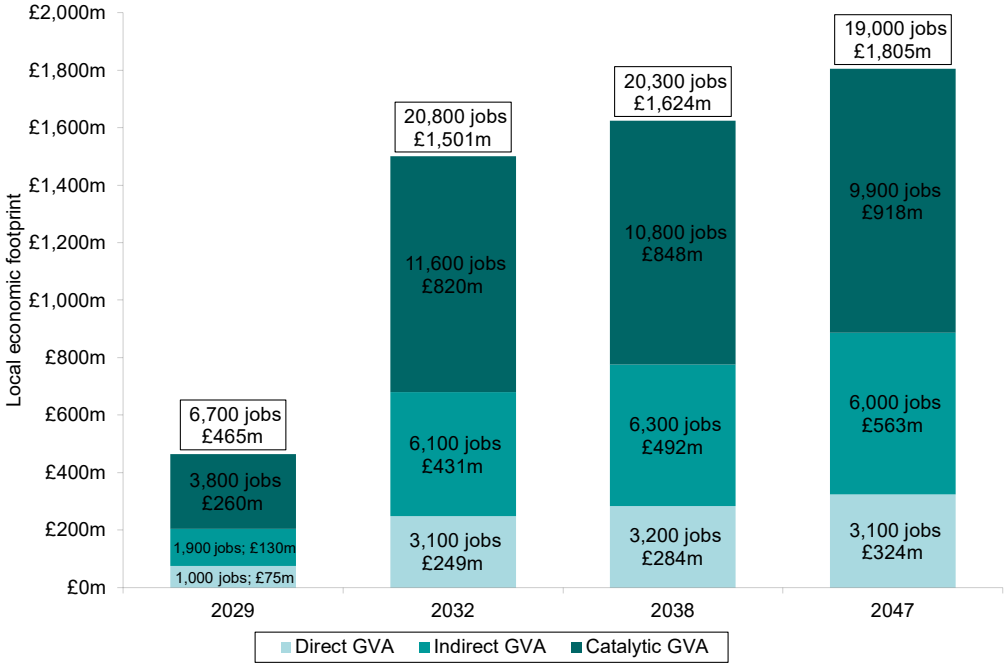
Overall Local and Regional Economic Footprint

7.3.19 Oxera estimate that the incremental economic footprint of the Project would be significant.

7.3.20 Across the Five Authorities study area, it would generate £1.5 billion of GVA and 18,400 regional jobs in 2038 through direct, indirect and catalytic effects. The total UK-wide economic footprint of the Project would be £1.6 billion of GVA and 20,300 jobs. More than half of the UK-wide economic footprint would occur within the Gatwick Diamond, with the vast majority of the remaining economic impact being split across the wider regional area.

7.3.21 The direct, indirect and catalytic economic footprint of the Project over the years of operation to 2047 is detailed in Figure 7.4, with a significant increase in the economic benefit being seen between 2029 and 2032.

Figure 7.4: The Project's Economic Impact (2029, 2032, 2038 and 2047)



Net Regional Economic Employment Impact

7.3.22 The economic footprint measures the total activity associated with the Project. However, if the Project did not take place, then most of the people who make up the economic footprint would be likely to be employed in other parts of the economy. For example, a job created at the airport may be taken by a person who would otherwise be in employment somewhere else, or who would gain employment somewhere else in the local area (or, indeed, elsewhere in the UK). Therefore, as an extension to the analysis, we have prepared an additional perspective on the economic impacts of the Project that accounts for this, which we call the 'net economic impacts'. These reflect the impacts generated above and beyond those that would have arisen anyway had people employed at Gatwick been doing something else.

7.3.23 To calculate the net impact of the Project, Oxera has considered:

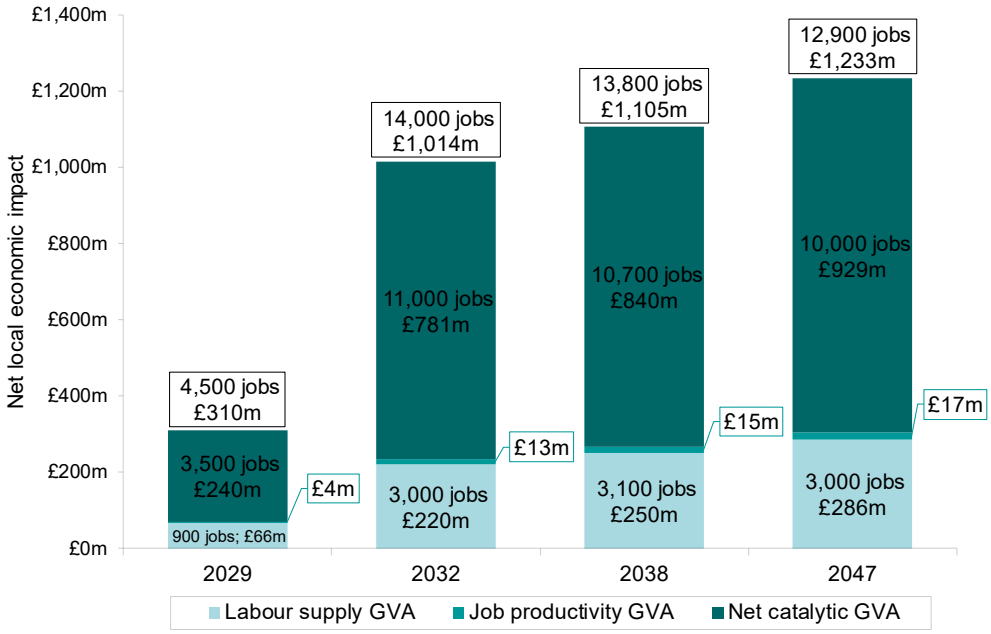
- Changes in the labour supply - for example, an increase in the economically active individuals who are willing to supply labour locally would increase net employment, but switching between jobs would not;
- The impact on GVA from switching to more productive jobs - people are more productive in their jobs than would otherwise have been the case (for example, if jobs at the airport or in its supply chain are more productive than the roles that would otherwise be available to people); and
- Net catalytic jobs that are created when firms choose to expand or locate close to Gatwick Airport because of the connectivity Gatwick provides—for example, some of the catalytic jobs would be expected to locate closer to another airport instead if the Project did not go ahead.

7.3.24 By following this approach, Oxera calculate that the Project's net impact across the Five Authorities area will be 13,800 jobs and £1.1 billion of GVA in 2038. Within the Gatwick Diamond it would be 7,700 jobs and £632 million (see Table 7.4). Figure 7.5 shows the Project's net economic impacts as value over the base case (GVA):

Table 7.4: The Project's Net Impact (2029 to 2047)

	2029	2032	2038	2047
GVA (£m)	**310**	**1,014**	**1,105**	**1,233**
of which Gatwick Diamond	176	578	632	705
of which Coast to Capital LEP	298	973	1,058	1,178
of which Five Authorities area	310	1,014	1,105	1,233
Employment	**4,500**	**14,000**	**13,800**	**12,900**
of which Gatwick Diamond	2,500	7,900	7,700	7,200
of which Coast to Capital LEP	4,300	13,400	13,200	12,400
of which Five Authorities area	4,500	14,000	13,800	12,900

Figure 7.5: The Project's net economic impacts as value over the base case (GVA) (2029 to 2047)



Distribution of Local and Regional Economic Benefits

7.3.25 Much of the economic footprint generated by Gatwick is concentrated around the airport. As noted above, a proportion of Gatwick Airport's indirect employment footprint could be outside of the region in the UK or abroad. However, more than half of the overall employment and value added benefits of the Project are predicted to occur within the Gatwick Diamond, with the vast majority of the residual benefits being split across the Coast to Capital LEP and the Five Authorities area.

7.3.26 A significant share of the economic footprint is located across the Gatwick Diamond (£889 million GVA) and the Coast to Capital LEP (£428 million GVA), while the remaining additional value added generated in the wider Five Authorities area and the rest of the UK is smaller (£158 million and £149 million respectively).

7.3.27 To put these estimates into context, if we were to convert GVA generated by the Project in the whole of the Five Authorities study area into the equivalent tax take, the Project's value added in the region in 2038 could be compared to the cost of establishing:

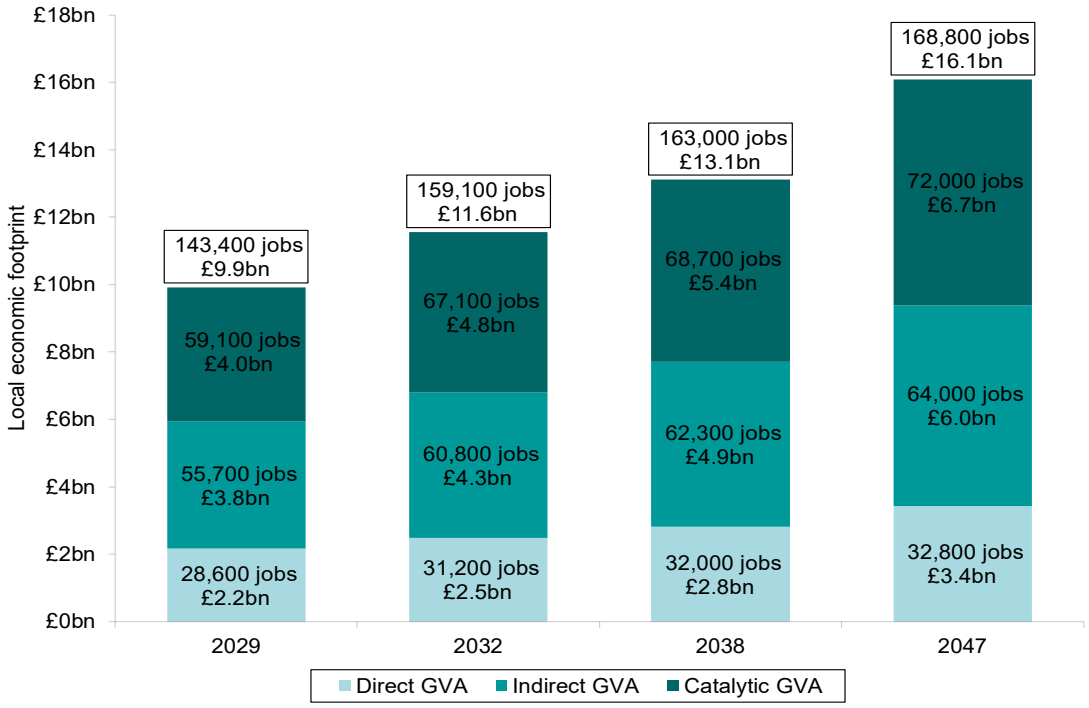
- 39,200 primary school places or 28,500 secondary school places; or
- 12,300 nurse positions or 9,700 police officer positions

Overall Economic Footprint of Gatwick with the Project

7.3.28 Oxera estimates that the total UK-wide economic footprint of Gatwick with the added benefits of the Project will be £13.1bn of GVA (in 2021 prices) and 163,000 jobs in 2038. In the Five Authorities study area in 2038, the total economic footprint will be £11.6bn of GVA and 144,200 jobs.

7.3.29 Figure 7.6 shows the build-up of the overall economic footprint of Gatwick Airport with the Project over the period 2029 to 2047.

Figure 7.6: Gatwick Airport with the Project – UK-wide Footprint Analysis (2029 to 2047)



Construction Employment

7.3.30 In addition to the employment benefits described above, the Project will also create a temporary requirement for construction workers between 2024 and 2038 during the construction phases. On the basis of the preliminary construction plans, there would be a peak in construction workforce at around 1,300 workers in 2026. This peak will be short in duration with, on average, 800

construction workers on site during the initial phase of construction (2024 to 2029) and an average of 450 over all phases of construction (2024 to 2038).

Outline Employment Skills and Business Strategy

7.3.31 Investing for future growth through the Northern Runway Project offers significant opportunities for new jobs, the development of new skills and career progression as well as real potential for business growth and increased productivity, and we want local people and local businesses to benefit from these opportunities as much as possible. We recognise the huge number of livelihoods that depend on our continuing success and as a significant employer across the region, we have a vital role in helping develop the next generation of talent.

7.3.32 Our Outline Employment, Skills and Business Strategy (OESBS), provided in our consultation documents, which has been prepared with insights from key stakeholders such as local businesses, business membership organisations, local enterprise partnerships, education providers and local authorities, includes proposals for achieving this through both the construction and operational phases, including:

- construction-focused training, upskilling and apprenticeship opportunities, delivered in partnership with industry experts like the National Skills Academy for Construction (NSAfC), the Construction Industry Training Board (CITB) and local education and training providers, in accordance with a robust skills and employment plan to ensure that skills reflect demand and maximise opportunities for local communities to benefit;

- leveraging our procurement process to maximise the inclusion of small businesses in our supply chains and drive up investment in local businesses, and collaborating with businesses and education providers on technology transfer to increase business productivity; and

- collaborating with other businesses on and around the Airport to accurately predict the demand for employees arising from the operational phases and develop a detailed strategy for recruitment, training and skills development that matches that demand. This would include exploring the expansion of capacity for providing Science, Technology, Engineering and Mathematics (STEM) and other learning on the airport site not only to meet defined skills needs but to inspire the next generation of talent and more experienced people alike to confidently invest their futures in opportunities not just at the airport, but with other employers in the area.

7.3.33 An Employment, Skills and Business Strategy Implementation Plan will be developed during the next stage of our work. It will set out the objectives for the Strategy, the initiatives that will be delivered, arrangements for the engagement of partners in shaping and delivering initiatives, and targets, milestones and projected benefits.

7.4 National Economic Impacts

7.4.1 The Oxera report includes an assessment of the impacts (both benefits and costs) of the Project on UK society in accordance with Government guidance. This assessment is divided into a number of parts, and enables the net social benefits and the net present value of the Project to be appraised. The assessment takes into account:

- Benefits to passengers and providers in the London aviation system;
- Wider economic impacts including inward investment, employment productivity and tax revenues generated for Government; and
- Environmental costs.

7.4.2 Oxera have calculated the benefits and costs resulting from the Project to passengers and providers of aviation services in the London aviation system over a time horizon of 60 years, in line with Government appraisal guidance and reflecting the longevity of the investment.

Benefits to passengers and providers in the London aviation system

7.4.3 From a national perspective, the impacts of the Project will arise through the creation of additional aviation capacity. This generates a variety of effects that provide benefits to passengers, airlines, the airport and others. As additional capacity becomes available, airlines will use this capacity to compete with each other for passengers and freight, leading to:

- a reduction in air fares;
- increased route frequencies;
- an increase in passenger numbers resulting from lower fares, more routes and higher frequencies;
- a reduction in profits to airlines due to reduced fares, offset by increased passenger numbers; and
- an increase in airport revenues as a result of an increase in the number of passengers, routes and frequencies.

7.4.4 There will also be costs arising from the Project. The Project requires capital investment in new infrastructure the cost of which will be met by GAL. In addition, there will be increased operating costs to Gatwick and airlines from, for example, serving additional passengers and aircraft.

7.4.5 Oxera have estimated that the net national economic benefit (i.e. the difference between the Baseline Case - where the Project is not undertaken - and the scenario with the Project) to the aviation system would range from £7.3bn to £14.3bn in 2010 prices and values (Table 7.5 below).

Table 7.5: Total benefits to passengers and providers in the London aviation system (£bn)

	Value (£bn)
Passenger Benefits	60.1 to 78.8
Impacts on airlines	(55.2 to 66.9)
Airport Revenues	2.4
Total benefits to passengers and providers	**7.3 to 14.3**

All estimates are in 2010 prices and values

Wider economic impacts

7.4.6 The benefits of additional airport capacity extend beyond passengers, airlines and airports. These wider economic impacts include:

- **induced investments** - increased connectivity making it easier to transport goods and services, and where the reduced costs of doing business leads to investment in the region;
- **employment effects** – through increased connectivity, which may increase demand for labour;
- **productivity impacts** – if workers switch to more productive jobs as a result of the Project, but also if there is an increased concentration of economic activity in a particular location because of the Project (known as the agglomeration effect);
- **increased trade, foreign direct investment (FDI) and tourism** – through increased connectivity which facilitates trade in goods and services and general travel, which has an overall uplifting effect on the economy through increased expenditure and productivity; and
- **tax revenue increase** - increased activity at Gatwick Airport would have direct and indirect impacts on public accounts by affecting tax revenues. Tax receipts from aviation would increase as more passengers travel from Gatwick Airport. The Project may also have an impact on other types of indirect taxes. For example, increased demand at Gatwick Airport would increase revenue from fuel duty, fuel VAT, rail franchises, or national non-domestic rates.

7.4.7 Oxera estimates these to be worth £4.7bn to £6.6bn to the UK economy over the 60-year assessment period.

7.4.8 In addition, the Project would generate additional Government revenue through increased Air Passenger Duty, estimated to be £4.7bn. Table 7.6 below illustrates the breakdown of these wider benefits.

Table 7.6: Wider Economic Benefits (£bn)

	Value (£bn)
Wider Economic Benefits	**4.7 to 6.6**
Output change in imperfectly competitive markets	4.0 to 5.8
Move to more or less productive jobs	0.1
Agglomeration benefits	0.7
Government Revenues	4.7
Wider Economic Benefits and Government Revenues	**9.4 to 11.3**

All estimates are in 2010 prices and values

Environmental Impact/Costs

7.4.9 The Project would result in environmental costs to UK society.

7.4.10 Based on the work of environmental consultants, Oxera have estimated the present values of these environmental costs - by monetising changes in noise, air quality and greenhouse gas emissions. The Project environmental costs have been valued from £0.9bn to £3.5bn in 2010 prices as illustrated in Table 7.7.

Table 7.7: Present value of monetised environmental impacts of the Project (£bn)

	Value (£bn)
Noise	0.0[1]
Air Quality	0.0 to 0.4
Greenhouse Gases	0.9 to 3.1
Total	**0.9 to 3.5**

All estimates are in 2010 prices and values
1. Present value of monitised impacts from aircraft noise is calculated at £10.7m

Net Social Benefits and Net Present Value of the Project

7.4.11 Combining the benefits to passengers and providers, and the value of wider economic impacts and the environmental costs, the net social benefits of the Project can be calculated. The overall national benefits and costs of the Project are summarised in Table 7.8 below:

Table 7.8: Net Social Benefits of the Project (£bn) and Net Present Value (£bn)

	Value (£bn)
Total benefits to passengers and providers	**7.3 to 14.3**
Passenger benefits	60.1 to 78.8
Impacts on airlines	(55.2 to 66.9)
Airport revenues	2.4
Wider Economic Benefits and Government Revenues	**9.4 to 11.3**
Output change in imperfectly competitive markets	4.0 to 5.8
Move to more or less productive jobs	0.1
Agglomeration benefits	0.7
Government revenues	4.7
Environmental costs (Noise Air Quality Greenhouse Gases)	**(3.5 to 0.9)**
Present value of net social benefits	**13.3 to 24.7**
Scheme Costs (Capital and Operational Expenditure)	**(2.7)**
Net present value	**10.5 to 22.0**

All estimates are in 2010 prices and values
The figures may not sum due to rounding

7.4.12 Taking into account scheme costs of £2.7bn, Oxera estimate that the NPV of the Project will be in the range of £10.5bn to £22.0bn in 2010 prices and values.

7.5 Other Economic Benefits

7.5.1 A number of other benefits of the Project are considered in the Oxera report.

Tourism

7.5.2 For many international travellers, aviation is the only feasible way to reach their destination.

7.5.3 Reduced fares and increased services reduce (generalised) travel costs, enabling passengers to travel abroad to see new places and visit their friends and relatives more frequently, which results in welfare benefits.

7.5.4 Gatwick acts as a vital gateway to the world for the UK's tourism industry. The increased connectivity resulting from greater runway capacity could facilitate tourism activity, for example, through expenditure on accommodation, transport and visitor attractions during a visit. It is important to recognise that an improvement in aviation services could facilitate both inbound tourism (to the UK) and outbound tourism (from the UK).

7.5.5 A study for the Gatwick Growth Board published in 2018[24] estimated that there is a significant level of spending in the UK associated with tourists transiting through Gatwick Airport.

7.5.6 The study showed that an estimated 5.5 million international visitors arrived in the UK via Gatwick in 2017, spending £3.9 billion in the visitor economy on hotel stays, restaurant meals, retail purchases, and leisure and cultural attractions. The demand facilitated by Gatwick Airport boosted UK gross domestic product (GDP) by some £4.7 billion, supported 93,300 jobs and generated £1.2 billion in tax revenues.

7.5.7 Much of the tourism activity supported by Gatwick is enjoyed by businesses in the local area, with roughly three-quarters of the impact concentrated in London and the South East. In 2017, overseas visitors spent 4.6 million nights in the Coast to Capital LEP, supporting 22,900 local jobs and generating £1.2 billion of value.

Air Freight

7.5.8 Air freight creates economic value to users by creating new opportunities for trade. For example, the speed of air freight makes it indispensable to highly time-sensitive supply chains. Where especially precise timing is required, freight services can be sold on the premise of a guaranteed delivery slot. More specialised air freight services can combine the mode's delivery speed with storage that meets niche requirements, for example relating to temperature, security or industry-specific regulations. Businesses that benefit from these kinds of services include providers of perishable foodstuffs and pharmaceuticals.

7.5.9 As noted earlier, in 2019, Gatwick handled 150,000 tonnes of freight. This was down from a peak of some 320,000 tonnes that was handled in 2000. By increasing the number of ATMs and thereby increasing both the frequency and range of destinations served, and particularly through increased long-haul connectivity, the Project will help to facilitate recovery in air freight. Cargo

[24] Oxford Economics (2018), 'Gatwick Airport's impact on the visitor economy'.

tonnages are therefore forecast to increase to over 250,000 tonnes as the Northern Runway enters service in 2029 and beyond this grow steadily to handle over 320,000 tonnes by 2038. This represents a return to previous levels and a 27% increase over the baseline (without Project) forecast of 254,000 tonnes in 2038.

Competition

7.5.10 Capacity constraints influence the level of competition between airports. The additional capacity with the Project would relax the capacity constraints at Gatwick Airport and attract passengers from the other London airports, especially those who would have preferred to travel using Gatwick Airport but would not be able to do so due to capacity constraints.

7.5.11 Increased competition can deliver a range of benefits that are additional to the economic impacts summarised above. Specifically, increased competition could result in:

- a reduction in fares over and above those anticipated;
- increases in service quality as airports and airlines try to make their products more attractive to passengers; and
- innovation to discover new cost-effective ways of doing business, and increased efficiency.

Resilience

7.5.12 The resilience of an aviation system refers to the system's ability to continue its daily activities as scheduled despite disruptions. A lack of resilience causes system-wide delays and cancellations through knock-on effects. It increases journey time variability, and the number and extent of delays, which decreases the reliability of air travel.

7.5.13 The Project would reduce delays caused by day-to-day unexpected events and major disruptions in a number of ways:

- additional capacity could increase route frequency. In the event of a problem on a specific route, or with a specific airline, this would reduce delays by allowing passengers to take a replacement flight;
- excess capacity would allow for greater resilience and faster recovery from disruptions to the main runway or the entire airport. It would also enable Gatwick Airport to absorb day-to-day variability in operations with fewer knock-on disruptions; and
- having additional runway capacity in the London aviation system would contribute to the resilience across the system by enabling it to cope better with major disruptions (particularly disruptions that cause the closure of an airport).

7.5.14 Whilst the excess capacity from the Project would reduce over time, the resilience it would provide would facilitate a speedier recovery from disruptions, enabling airlines and airports to respond faster and with more options to unexpected events, and in turn mitigating costs associated with disruption and delay and reducing the discomfort and welfare loss to passengers.

7.6 Conclusion

7.6.1 The Project would have significant benefits at the national level through its impact on aviation markets and the wider economy. These impacts would be materially larger than the negative impacts that we have quantified, meaning that the Project would have a positive social impact

overall.

7.6.2 While there are benefits from the Project to the UK from increased connectivity and capacity, there will also be substantial local and regional impacts through direct, indirect and catalytic impacts in the local economy. In 2038:

- In the Gatwick Diamond, the Project would represent an economic footprint of £889m in GVA and create 10,900 additional jobs
- Across the wider Five Authorities area, the benefits increase to 18,400 jobs and £1.5 billion in GVA
- Across the UK, it would generate £1.6 billion of GVA and 20,300 jobs

7.6.3 Further benefits would be derived from increased tourism and freight, improved resilience and enhanced competition.

8 Summary of Effects

8.1 Background

8.1.1 We are committed to being a responsible airport operator, striking a balance between the social and economic benefits of the Project and its environment and people impacts.

8.1.2 This section describes the likely significant environmental effects of the Project following our preliminary environmental assessment work and how we are proposing to manage and mitigate them. Our approach has very much been to firstly avoid, prevent and where possible, reduce adverse impacts and then to offer mitigation. Wherever possible, opportunities have been taken to provide more than just mitigation for example, through additionally offering environmental enhancements.

8.1.3 This chapter sets out, by topic, the findings of our environmental assessments to date. This is also summarised in **Chapter 20 (Summary of Effects) in the PEIR**. It also describes the mitigation measures proposed to avoid, reduce and, if possible, remedy adverse effects.

8.2 Environmental Impact Assessment

8.2.1 We are undertaking a formal process of Environmental Impact Assessment (EIA) to understand the likely environmental effects of the Project, both positive and negative. Details of our assessment to date can be found in the **Preliminary Environmental Impact Report (PEIR)** published alongside this document.

8.2.2 The PEIR sets out our initial conclusions on the likely significant environmental effects of the Project so that respondents can provide informed feedback to our consultation. It follows the broad structure of an Environmental Statement (ES), which will be submitted as part of our application for development consent. The PEIR has been informed by legislative requirements; the nature, size and location of the project; the Scoping Opinion and consultation responses received to date from the Planning Inspectorate and other key stakeholders.

8.2.3 The environmental assessment is ongoing and, therefore, the development of the Project design and appropriate mitigation, monitoring and enhancement measures will be refined alongside the continued assessment and taking into account the consultation responses received. The findings will be reported in the ES, which will form part of the application for development consent.

8.3 Approach to Mitigation

8.3.1 The development of mitigation measures is part of the iterative EIA process. Therefore, measures are under consideration throughout the EIA process in response to the findings of initial assessments. The Project will include a range of measures designed to reduce or prevent significant adverse environmental effects arising, where practicable. In some cases, these measures may result in enhancement of environmental conditions. The assessment of effects in the PEIR takes into account all measures that currently form part of the Project and to which we are committed. These measures are currently at an early stage of development and will be refined further through the EIA process and in response to consultation, prior to preparation of the final ES.

8.3.2 We are considering a range of mitigation types as follows:

- measures included as part of the Project design (sometimes referred to as primary or embedded mitigation);
- measures proposed to avoid effects occurring, or to minimise environmental effects, such as measures to control light spillage (sometimes referred to as secondary mitigation). Where these measures relate to the construction phase, they will be implemented through the Code of Construction Practice (CoCP) and any other environmental management plans; and
- measures required as a result of legislative requirements or standard good practice (sometimes referred to as tertiary mitigation). Although many of these measures are regulated separately, these measures will also be included within the CoCP and any other environmental management plans for completeness.

8.3.3 Where required, further mitigation measures have been identified. These are measures that could further prevent and, where possible, offset any residual adverse effects on the environment. Where this is the case, residual effects with the further mitigation in place have been considered.

8.3.4 Where appropriate, monitoring measures have been identified for each topic alongside the mitigation measures.

8.3.5 Mitigation and monitoring measures identified to control construction effects would be implemented through the CoCP. Where necessary, for example in relation to the future management of any ecological mitigation areas, operational management plans would be developed. An outline CoCP is provided at **Appendix 5.3.1 of the PEIR**.

8.3.6 As the EIA process progresses, further work in relation to mitigation measures will be undertaken and this will inform the design of the Project for which development consent is sought. This will be reflected in the ES. The draft DCO will be developed to be consistent with the measures identified in the ES, CoCP and any draft management plans, in order to ensure consistent implementation of the measures identified through the EIA process.

8.4 Historic Environment

8.4.1 We have considered the potential effects of the Project on heritage assets, including historic buildings and areas, historic landscape character and buried archaeological remains. Our preliminary findings are set out in **Chapter 7 of the PEIR**.

8.4.2 Very little of the preceding historic landscape remains in the land within the Project site, as it is predominantly occupied by the operational airport. However, there are three designated heritage buildings wholly within the Project site boundary:

- the Grade II* listed Charlwood Park Farmhouse in the north western part of the Project site; and
- the conjoined Grade II listed Edgeworth House and Wing House in the eastern part of the Project site and forming part of the adjacent Marriott Hotel;

8.4.3 Additionally, the Church Road Conservation Area on the south western edge of Horley is partially within the Project site.

8.4.4 The wider study area includes a considerable number of designated heritage assets; five Scheduled Monuments (including an area of former medieval settlement at Tinsley Green and a

medieval moated manor house site known as Thunderfield Castle), three Grade I listed churches, ten Grade II* listed buildings, numerous Grade II listed buildings or structures (many located within the historic village of Charlwood and within Horley) and four Conservation Areas.

8.4.5 We have undertaken archaeological fieldwork at several locations within the Project site boundary in the past. Additional walkover surveys and site visits have been used to examine specific locations, including the settings of numerous heritage assets.

8.4.6 Archaeological investigations in the north western part of the airport identified the remains of settlement activity dating from the Late Bronze Age. Numerous palaeochannels of the Gatwick Stream have also been identified, along with evidence for activity in the Upper Palaeolithic, Mesolithic, Iron Age, Roman and medieval periods.

8.4.7 We are planning to undertake further investigation of the archaeological potential of land within the Project site boundary to inform the Environmental Statement.

Potential Effects

8.4.8 We have assessed the extent to which the Project may result in impacts on heritage assets during construction and the potential for changes in the setting of heritage assets due to noise and visual intrusion. During the operational phase, we have assessed the extent to which the proposals could impact on heritage assets due to changes in their setting arising from the presence of the proposed development.

8.4.9 The only likely significant effects to the Historic Environment are potential effects relating to ground archaeological deposits and these could be up to major adverse and significant for the purposes of the assessment. These effects will be offset by a programme of archaeological investigation and recording some of which is already underway.

8.4.10 The PEIR has drawn on the extensive knowledge of the historic environment at Gatwick based on previous archaeological investigations and surveys. We have used this knowledge to identify Zones of Archaeological Potential within the Project site boundary (see **PEIR Figure 7.6.5**). This shows zones of high and medium potential across the Project site and allows for a conservative assessment of the likely significant effects the Project will have on the archaeological resource. A programme of archaeological investigation by trial trenching is ongoing which will inform on the significance of below-ground archaeological deposits and provide for a more detailed assessment which will be report in the Environmental Statement.

8.4.11 During the initial construction phase, there is the potential for major adverse effects on buried archaeological remains as a result of the establishment of contractor compounds on land that has not been previously developed. This also applies where ground levels would be lowered for proposed flood compensation areas at Museum Field, land east of Museum Field, and at Car Park X. The effects would be offset through a programme of further archaeological investigation.

8.4.12 The placement of spoil and subsequent construction of the decked car park at Pentagon Field could also lead to impacts on buried archaeological remains. This effect would be offset through a programme of archaeological investigation which is already underway.

8.4.13 The demolition of the former air traffic control tower would represent a minor adverse effect that would be offset by recording of the building prior to its demolition.

8.4.14 Appropriate mitigation measures may be incorporated into the establishment of the environmental mitigation land surrounding Museum Field to avoid or reduce damage to the buried archaeological remains by, for example, altering the location of tree planting. With these measures in place, the significance of effect would be negligible to minor adverse and not significant. Where it is not possible to apply any mitigation measures, the effects could be up to major adverse but would be offset by a programme of further archaeological investigation.

8.4.15 There may also be up to moderate adverse effects resulting from impacts on potential buried archaeological remains as a result of the construction of the replacement 'Purple Parking' at the western end of Crawter's Field. These effects would be offset by a programme of archaeological investigation.

8.4.16 The relocation of Pond A and the diversion of the River Mole could impact on possible palaeochannels leading to an effect of up to moderate adverse significance. This effect would be offset by a programme of geoarchaeological investigation.

8.4.17 During the initial operation phase (2029 to 2032), there would be minor adverse effects resulting from changes within the settings of the Grade II* listed Charlwood Park Farmhouse, several Grade II listed buildings at Charlwood and the Conservation Area at Charlwood as a result of the relocation of the CARE facility whose flue would be visible in views due to the proposed 50m flue height. The CARE facility Option 2 flue location is more likely to influence the adjoining landscape than the flue at the CARE Option 1 location (and is therefore considered the worst case scenario throughout the PEIR assessment).

8.4.18 In addition, there could be a major adverse effect arising from impacts on buried archaeological remains during the establishment of the surface access satellite compound north of Longbridge Roundabout. Appropriate mitigation measures may be incorporated into the construction works here to avoid or reduce damage to the buried archaeological remains. With these measures in place, the significance of effect would be up to minor adverse. Where it is not possible to apply any mitigation measures, the effects would be offset by a programme of further archaeological investigation. There would also be an effect of minor adverse significance as a result of the change within the setting of the Church Lane (Horley) Conservation Area.

8.4.19 During the ongoing construction and operation of the Project (2033 to 2038), the construction of the flood storage area east of Gatwick Stream would lead to the complete loss or substantial damage of buried archaeological remains resulting from the reduction of ground levels. This would result in up to a major adverse effect which would be offset through a programme of further archaeological investigation.

8.4.20 There would be minor adverse effects (due to ground noise changes on the setting) on the significance of the Grade I listed Church of St Nicholas (Charlwood), also The Manor House (Charlwood), Providence Chapel (Charlwood) and Charlwood Park Farmhouse (all Grade II* listed buildings), and negligible adverse effects on the significance of the Conservation Area and several Grade II listed buildings at Charlwood.

Measures for Reducing Potential Effects

8.4.21 Where possible, potential adverse effects arising from the Project on the historic environment will be avoided and minimised.

8.4.22 Several measures have been designed into the Project to reduce the prominence of the proposed development and the potential for impacts on the historic environment including a vegetation retention strategy for existing significant vegetation including hedgerows, woodland and trees; woodland and tree planting; proposed earth shaping embankments cuttings and bunds; proposed fences, walls and barriers and environmental mitigation at parcels of land surrounding Museum Field.

8.4.23 Potential enhancements include the removal of detracting elements within the setting of a heritage asset and their replacement with elements that make a positive or neutral contribution to the significance of the asset.

8.4.24 Mitigation against potential impacts to buried archaeological remains would principally comprise avoidance through design or protection by placing material over the archaeological remains. Where it is not possible to apply appropriate mitigation measures, a programme of further archaeological and geoarchaeological investigation would be undertaken to offset any adverse effects.

8.5 Landscape, Townscape and Visual Resources

8.5.1 We have considered the potential effects of the Project on the landscape, townscape and visual resources. Our preliminary findings are presented in **Chapter 8 of the PEIR.**

8.5.2 Our assessment examines the character and features of the landscape and townscape and the changes as a result of the Project during construction and operation, during the daytime and at night. In addition, we consider the potential visual effects.

8.5.3 Due to the scale and nature of development at the airport, the airport forms its own distinctive and well-defined urban townscape within the wider Low Weald landscape that is not separately defined in published character assessments.

8.5.4 The airport occupies most of the land within the Project site boundary with smaller areas of farmland and open space beyond the current airport boundary. Much of the land within the site is flat and open. The main built form is located at the North Terminal and South Terminal clusters.

8.5.5 Rural landscapes of the Open Weald lie to the north, the Upper Mole Farmlands to the west and south, the High Woodland Fringes to the east and the Low Weald around Horley to the north east. Four areas of ancient woodland are located within the Project site, including Horleyland Wood and Brockley Wood. There are no designated landscapes that lie within the Project site. The High Weald Area of Outstanding Natural Beauty lies approximately 3 km to the south east.

8.5.6 The Project site is currently not visible in views from most parts of Crawley and Horley due to intervening vegetation or development. Views from the surrounding rural landscapes are generally screened by intervening vegetation. Views of the Project are therefore mainly limited to:

- walkers and equestrians using public rights of way within and around the airport;
- cyclists using cycle routes including National Cycle Route 21;
- occupiers of residential properties at Horley;
- occupiers of commercial properties around the airport edge;
- occupiers of vehicles using the A23 and occupiers of trains;
- visitors to Gatwick Airport using roads, car parks, hotels and terminals; and

- members of staff working at Gatwick Airport.

Potential effects

8.5.7 We have assessed the extent to which the Project may result in impacts on the landscape, townscape and visual resources including cumulative effects associated with the construction and operational phases.

8.5.8 Significant adverse effects on surrounding landscape character areas within the study area have been assessed as unlikely.

8.5.9 Due to the largely urban character of the airport within the Project site, its redevelopment would result in the removal of a limited number of important landscape or townscape features. New buildings and infrastructure would provide intensification of the existing character of the airport and neighbouring settlements of Crawley and Horley.

8.5.10 Major adverse and significant effects on Pentagon Field are predicted during all phases of the Project (due to the development of Pentagon Field and change in character from pastureland to a decked car park). The effects on the wider Gatwick Airport Urban Character Area would not be significant.

8.5.11 During construction, some temporary significant effects on views may be experienced. Major to substantial adverse and significant effects are predicted for walkers using the public right of way at Pentagon Field during the initial construction phase (2024-2029) and in the first period of operation (2030-2032). In the longer term as mitigation planting matures to soften and screen the Project these effects would not be significant.

8.5.12 Pedestrians using the pavement at Balcombe Road beside Pentagon Field would also experience major adverse visual effects during 2030 to 2032 due to temporary construction effects.

8.5.13 Major adverse and significant effects are predicted for cyclists using National Cycle Route 21 within Riverside Garden Park during 2038 as visual receptors would gain near views of the A23 improvements either during construction or when complete. This would be reduced to moderate adverse effects, which would not be significant, in the longer term as planting matures to soften and screen the Project.

8.5.14 The changes to levels of tranquillity as a consequence of the Project within the nationally designated landscapes would not be significant.

8.5.15 In terms of cumulative effects, the Project has the potential to contribute to significant effects on the High Woodlands Fringes, Upper Mole Farmlands, Low Weald and Mole Valley Open Weald Character Areas. By 2033 and during 2038, the effect on the Low Weald Character Area would reduce such that it would not be significant, whilst the effect on the Mole Valley Open Weald and High Woodlands Fringes Character Areas would reduce such that cumulative effects would not be significant, while the effect on the High Woodlands Fringes and Upper Mole Farmlands Character Areas would remain significant. However, and on balance, we have assessed the Project as making a negligible contribution to this cumulative effect due to the comparatively large scale and extent of the other proposed cumulative developments.

8.5.16 In the longer term, the assessment from 2038 indicates there are no significant landscape, townscape and visual effects arising as a result of the Project.

Measures for reducing potential effects

8.5.17 Where possible, potential adverse effects arising from the Project on the landscape, townscape and visual resources will be avoided and minimised.

8.5.18 Several measures have been designed into the Project to reduce the potential for impacts on landscape, townscape and visual resources including:

- retention of and protection of existing vegetation;
- proposed planting;
- proposed new areas of open space;
- lighting strategy;
- proposed earthworks/earth shaping; and
- proposed visual screens.

8.6 Ecology and Nature Conservation

8.6.1 We have identified and assessed the potential effects of the Project on the ecology and nature conservation interest of the Project site and surrounding receptors. Our preliminary findings are presented in **Chapter 9 of the PEIR**.

8.6.2 We have gathered data on statutory and non-statutory conservation sites, priority habitats and species, and legally protected and controlled species. We also requested records of protected or otherwise notable species from local records centres within a 2 km radius of the Project site boundary, except for bats and otter where a larger 10 km radius has been used in accordance with relevant guidance and a number of site-specific surveys were carried out.

8.6.3 We have also considered if the Project could significantly harm the designated features of a European site. This is pursuant to the Conservation of Habitats and Species Regulations 2017 as amended (known as the 'Habitats Regulations'). An assessment under the Habitats Regulations known as a Habitats Regulations Assessment (HRA) has been prepared and is provided as **Appendix 9.9.1 to the PEIR**. The HRA concludes that there are no significant effects.

8.6.4 There are 17 statutory designated sites located within the search area. These include three internationally designated sites which are situated within 20 km and 14 nationally designated sites within 5 km of the Project site boundary. There are no statutory designated sites within the Project site boundary with the nearest being Willoughby Fields Local Nature Reserve (LNR), which is located approximately 786 metres to the south of the Project site.

8.6.5 A total of 21 non-statutory designated sites were identified within 5 km of the Project site boundary. The Project site was found to largely comprise low value habitats associated with the airport and infrastructure, comprising large areas of hardstanding and amenity grassland with areas of ornamental shrub and tree planting. These areas are predominantly located within the centre of the Project site. Areas around the periphery of the airport were identified as more natural and included areas of broadleaved woodland and neutral grasslands.

8.6.6 Our studies and surveys identified 61 species of wintering bird and 72 species of breeding bird within the Project site, 48 of which were confirmed to be breeding within the Project site and three possibly breeding. Grass snakes were recorded within the Project site in two distinct areas, along the River Mole corridor and within the land east of the London to Brighton railway. Great crested

newts (GCN), smooth newts, common toad and common frogs were also recorded in ponds across the Project site.

8.6.7 The desk study search provided records for at least 14 bat species within and immediately adjacent to the Project site and at least six bat species were recorded across the survey area, including rare species.

8.6.8 Signs of badger activity were recorded during badger surveys. No signs of dormice, otters or water voles were recorded within the Project site boundary.

8.6.9 An invertebrate habitat appraisal identified features of moderate invertebrate interest within the land south of the Aviation Museum and west of the Fire Training Ground, Museum Field and Pentagon Field. The River Mole and Gatwick Stream also supported macroinvertebrate communities and both watercourses had consistently high fish populations.

Potential effects

8.6.10 We have assessed the extent to which the Project may result in impacts on ecology and nature conservation during construction and operational phases.

8.6.11 Our assessment indicates that the Project would have no effect on statutory or non-statutory designated sites or areas of ancient woodland. The effects on habitats and species are generally not significant.

8.6.12 The initial construction phase (2024-2029) and the following period (2030-2032) requires the removal of species-poor hedgerow and loss of plantation woodland and scrub habitat. The loss of these habitats would result in moderate adverse and significant effects that would not be mitigated for until the end of the construction phase. Additional hedgerow planting would be undertaken early in the construction phase on other parts of the Project site, which would enhance habitat connectivity in these areas. This would result in a moderate beneficial and significant effect in the longer term.

8.6.13 The Project would require the removal of habitats in the initial construction phase which would result in the temporary displacement of breeding birds. The loss of suitable breeding sites would result in a moderate adverse and significant effect during the initial construction phase (2024-2029). The habitat loss would also result in a temporary moderate adverse effect on the bat and invertebrate assemblages. This would be a temporary effect until new tree, grassland and shrub planting had established.

8.6.14 There would be no permanent significant effects. Some negligible to minor beneficial permanent effects would arise because of habitat creation. Currently, no potential for significant cumulative effects has been identified.

Measures for Reducing Potential Effects

8.6.15 Where possible, potential adverse effects arising from the Project on ecology will be avoided and minimised.

8.6.16 Several measures have been incorporated to reduce the potential for impacts on ecology and nature conservation. All measures will be considered against aerodrome safeguarding and safety requirements prior to implementation. Such mitigation includes:

- avoidance of development at designated sites, areas of woodland (including ancient woodland) and other sensitive habitats wherever practicable;
- protection of retained woodland, trees, scrub and hedgerows;
- measures for the appropriate storage of material and fuels and the management of runoff to avoid the pollution of designated sites;
- suitable timing of required vegetation clearance to reduce impacts to breeding birds;
- translocation of reptiles and amphibians;
- creation of artificial badger setts;
- measures to ensure that badgers are not harmed during the construction phase;
- lighting designed to avoid disturbance to areas of value for bats;
- creation of new, high value habitats comprising woodland, tree, shrub and scrub planting, grassland and wetlands/ponds;
- restoration of temporary land take to habitats of existing or greater ecological value;
- provision of bat roost features;
- replacement of non-native hedgerow with native species-rich hedgerow;
- tree and scrub planting to reinforce habitat connectivity;
- creation of a new high value pond in the Gatwick Stream flood compensation area;
- realignment of the River Mole to provide a more natural river profile; and
- creation of new habitats for great crested newts, grass snake, aquatic and terrestrial invertebrates.

8.6.17 We have identified specific areas to provide habitats of conservation interest. These include:

- Creation of new, high value habitats comprising a mixture of wet and dry neutral grasslands along the new channel of the River Mole and within the Museum Field and adjacent flood compensation areas to provide new habitats for grass snake and other fauna displaced during the diversion of the River Mole and construction of the flood compensation areas.
- Creation of new, high value habitats comprising neutral and marshy grassland within Gatwick Stream flood compensation area in the east of the Project site to mitigate for habitats lost and to create new habitats for grass snake and GCN displaced during the construction of the flood compensation area.
- Creation of new habitats within a newly created mitigation area in the western part of the Project site comprising woodland, scrub planting, grassland creation and wetland/pond creation.

8.6.18 We will monitor the success of the mitigation and enhancement measures to identify any required remedial measures. Monitoring would be undertaken for great crested newts, grass snakes, bats and badgers.

8.7 Geology and Ground Conditions

8.7.1 We have assessed the effects of the Project on land and groundwater quality, land instability and mineral resources. Our preliminary findings are presented in **Chapter 10 of the PEIR**.

8.7.2 The assessment includes an evaluation of ground conditions and the nature of any contamination present. A minerals resource assessment will be submitted with the Environmental Statement. Our study area includes the Project site and an additional buffer of up to 500 metres.

8.7.3 Baseline information on geology, hydrogeology and ground conditions was collected through a detailed review of existing studies and datasets and a site walkover was also undertaken to

validate the information collected from the desk review and to identify any existing sources of potential contamination.

8.7.4 The Project site is underlain by superficial deposits including Alluvium, Head and River Terrace Deposits. The deposits are associated with the surface watercourses that flow across the site and are classified as Secondary A aquifers and have a medium sensitivity. The underlying bedrock comprises Weald Clay, which is classified as an unproductive stratum and has a low sensitivity.

8.7.5 The Project site is located within a Brick Clay Resource Mineral Safeguarding Area as designated by the West Sussex County Council Minerals Planning Authority. The study area is also located within a surface water Nitrate Vulnerable Zone (NVZ) and a surface water Safeguard Zone (SgZ).

8.7.6 Prior to development as an aerodrome, the site was used as farmland, a racecourse and golf course, with a railway line through the site. The site was developed as an aerodrome by the 1930s and major airport development had occurred by the 1950s. The airport has been subject to further development, which has been accompanied by an extensive drainage and balancing pond network and hotel, car parking and commercial development.

8.7.7 A number of previous investigations have been undertaken on the Project site, the review of which has focused on the areas of the site proposed for redevelopment. Elevated levels of contaminants were detected in soil, leachate and groundwater samples taken from various locations, together with elevated levels of ground gas (methane and carbon dioxide).

Potential effects

8.7.8 The assessment has considered potential impacts on the underlying aquifers, surface watercourses, human health (construction workers and future site users) and mineral resources.

8.7.9 We have identified a number of potential affects arising from the Project, these include:

- Runoff from construction areas to soils (and subsequent leaching into groundwater, including effects on any private water supplies if present).
- Contamination risk to construction workers, including dermal contact and ingestion; or inhalation of any accumulated ground gases.
- Contamination risk to the public and the local public water supply, for example, airborne migration and subsequent dermal contact and ingestion.
- Loss of mineral resources.
- Contamination risk from spillages during re-fueling operations/fuel storage leakage/spills.
- Contamination risk to airport workers.

8.7.10 Our initial findings show there are no significant affects arising from the Project in terms of impacts on non-agricultural soil resources, aquifers, surface watercourses, human health or mineral safeguarding areas. Remediation will be required during construction. There are no significant cumulative effects arising from our assessment.

Measures for reducing potential effects

8.7.11 Our proposals seek to minimise potential risks to human health and the environment relating to geology and ground conditions. We have developed a number of measures to mitigate these risks including the need for further assessment/ground investigation in consultation with

stakeholders.

8.7.12 Where the results of the ground investigation determine that remediation is required to ensure that the site is suitable for its proposed use, a Remediation Strategy would be prepared.

8.7.13 Similarly, where appropriate, we propose to prepare a Materials Management Plan to document the management of soils on the site.

8.7.14 We continue to engage with West Sussex County Council Mineral Planning Authority to discuss opportunities to minimise the impacts of the Project on the Mineral Safeguarded Areas. The material excavated from the Mineral Safeguarded Area for mineral use will be explored once further details of the likely timing and nature of the material are known.

8.7.15 Other mitigation will include:

- Implementation of measures to prevent and control spillage of oil, chemicals and other potentially harmful liquids (through the Code of Construction Practice)
- Implementation of measures to protect groundwater during construction, including good environmental practices based on legal responsibilities and guidance on good environmental management (through the Code of Construction Practice)
- Use of control measures, including appropriate personal protective equipment and adoption of high levels of personal hygiene by construction workers
- Development of an Unexploded Ordnance mitigation strategy
- Secure storage facilities will be deployed, including a secondary containment system. A spillage control procedure would be implemented to ensure that any spillages are contained and removed
- Groundwater and surface water monitoring as may be required by the Remediation Strategy

8.8 Water Environment

8.8.1 We have assessed the effects of the Project on all aspects of the water environment as listed below. Our preliminary findings are presented in **Chapter 11 of the PEIR**:

- flood risk (including surface water drainage);
- geomorphology;
- Water Environment Regulations (previously the Water Framework Directive);
- water quality;
- groundwater resources;
- wastewater infrastructure; and
- water supply infrastructure.

8.8.2 Gatwick Airport is located in the Thames River Basin District and within the Upper Mole catchment. The River Mole flows through the airport, passing under the existing main and northern runways in culvert. Tributaries of the River Mole, including Crawter's Brook, the Gatwick Stream and Westfield Stream all run through or adjacent to the Project site.

8.8.3 The primary sources of flood risk to the Project have been identified as fluvial (rivers) and surface water.

8.8.4 There are areas of Flood Zone 3 (areas at risk of flooding in a 1% (1 in 100) Annual Exceedence Probability event) and Flood Zone 2 (area at risk of flooding in between a 1% and 0.1% (1 in 100

to 1 in 1000) Annual Exceedence Probability event) within the Project site. These are associated with the River Mole, Westfield Stream, Man's Brook and Crawter's Brook on the western and southern sides of the airport and with the Gatwick Stream on the eastern side. Beyond the Project site boundary, the Flood Zones are quite extensive and include a number of potential receptors for the Project, including residential areas and transport infrastructure that serves both Gatwick and the wider region.

8.8.5 There are areas of the existing airport at risk of fluvial flooding in the existing scenario from a 1% (1 in 100) Annual Exceedence Probability event. Should such predicted flooding occur it would be managed to ensure the safety of passengers and staff by the Gatwick Airport Flood Response Management Plan.

8.8.6 Surface water flooding occurs in several areas of the existing airport. Areas at high risk (greater that 3.3% (1 in 30 annual probability) are predominately associated with areas around existing watercourses or drainage features, although there are isolated pockets of high risk likely to be the result of rainfall filling local depressions rather than overland flow paths. Areas at medium risk (between 3.33% and 1% (1 in 30 and 1 in 100 annual probability) are generally small and adjacent to the areas at high risk. A large area at medium risk is located near the River Mole and south of the existing main runway. There are larger areas predicted to be at low risk (between 1% and 0.1% (1 in 100 and 1 in 1000 annual probability) within the airport, particularly to the south of the main runway and in proximity to existing terminal buildings. Based on the Crawley Brough Council Strategic Flood Risk Assessment there have been only two occurrences of groundwater flooding recorded in the Crawley area. These are not located near the airport.

8.8.7 Drainage of the airport is via a series of ponds which also provide treatment of runoff when deicer is applied to aircraft and the airfield during winter months. When runoff is of sufficient quality these ponds discharge it to the River Mole and the Gatwick Stream, and when not, runoff is retained and treated at long-term lagoons to the east of the airport to then be discharged to Thames Water's Crawley Sewage Treatment Works.

8.8.8 The airport foul wastewater network comprises two discrete systems: one serving the North Terminal and discharging to Thames Water's Crawley Sewage Treatment Works, and a second network serving the South Terminal and a hotel development on the North Terminal site discharging to Thames Water's Horley Sewage Treatment Works approximately 6 km to the north of the airport via the trunk sewerage system. The Thames Water public sewerage network to which the airport discharges may undergo some changes in response to the increase in flows subject to the outcome of the forthcoming Thames Water Development Impact Assessment.

8.8.9 The airport is supplied with potable water by Sutton and East Surrey Water (SESW). In the 'Gatwick Sub-region' Water Cycle Study (2020), SESW stated that there was sufficient capacity at their treatment works to meet projected demand. The PEIR includes assessment of projected water demand in future years with the Project and of ongoing consultation with SESW.

Potential effects

8.8.10 The main aspects of the Project considered to have potential significant effects on the water environment are:

- **Alterations to runway, taxiways and holding areas** – potential increase in impermeable area and consequently surface water runoff volume (including potentially polluted runoff). These would encroach into the existing floodplain and disconnect areas that currently flood.
- **Pier and stands amendments** - potential to alter the distribution of runoff and the use of de-icer which could affect water quality if unmitigated.
- **Reconfiguration of airport facilities** - potential to redistribute runoff across the airfield however runoff would continue to drain to existing ponds. The noise mitigation measures could sever or remove the existing floodplain.
- **North Terminal Extension, Hotel & Commercial facilities** - effects on water infrastructure requiring the provision of additional water supply and an increase in wastewater flows.
- **Construction compounds** – potential to increase runoff to the drainage system and increase the risk of pollution to the water environment, some encroachment of the floodplain.
- **Car parking** - excavations for new car parks could affect groundwater resources, increase in impermeable area potentially increasing runoff rates, flood risk and reduction in water quality.
- **Surface access improvements** - increasing flood risk due to encroachment into the floodplain and increased runoff, potentially detrimental to water quality and the modifications to the existing Brighton Road bridge over the River Mole could affect geomorphology. Piling activities during construction could affect groundwater resources.
- **Wastewater treatment works** - excavations could impact upon groundwater resources.

8.8.11 Our preliminary assessment of effects on the water environment indicates there would be no significant adverse effects, no requirement for additional mitigation measures (in addition to those identified and listed below) or additional monitoring to ensure compliance across construction, initial operation and interim phases of the proposed development. At the design year, we expect there will be some significant beneficial effects for the water environment.

8.8.12 The Environment Agency's (EA) climate change allowances (CCAs) are the best national representation of how climate change is likely to affect flood risk for peak river flow and peak rainfall intensity based on the outputs of the United Kingdom Climate [Change] Projections 2018 (UKCP18). The EA has recently made changes to the allowances so as to reduce them for the Thames Basin Catchment based on UKCP18. The hydraulic modelling undertaken for the PEIR assessments uses the previous CCAs and is therefore conservative as the allowances to be applied have reduced compared to those previously required. The modelling will be updated for the current CCAs to inform the ES which may result in a reduction in the size of some of the planned flood compensation areas. The CCAs used are discussed in **Chapter 11, Section 11.6 of the PEIR**, and the effects of climate change on the water environment assessed in **Section 11.10**.

8.8.13 Hydraulic modelling results showed that the development of the Project would increase the risk of flooding if no mitigation was in place. Therefore, flood mitigation measures have been proposed and are embedded in the Project, such that the Project will remain safe for its users and would not increase flood risk elsewhere taking the predicted impact of climate change into account. For certain receptors, the Project improves fluvial flood risk for third parties.

8.8.14 For geomorphology, the assessment evaluates the potential impacts of the Project and the embedded flood mitigation measures on the geomorphology of watercourses in the study area, during the construction and operational phases of the Project. The assessment found that during

the initial construction phase of the Project, there would be minor adverse impacts on the River Mole associated with construction of the channel diversion and creation of flood compensation areas which are part of the embedded flood mitigation. The effects would be temporary, however, and the channel diversion works would deliver an overall improvement to the geomorphology of the watercourse, supporting Water Environment Regulations objectives during operation. There would be minor impacts during construction works, with the provision of mitigation and best practice measures through the CoCP.

8.8.15 Within the catchment there are several water bodies assessed in the Water Environment Regulations compliance assessment, including both surface water and groundwater features, many of which are of high importance. These could potentially be impacted by construction works, but through appropriate design and mitigation, the impact would not be significant. Following completion of construction, during operation, it is anticipated that there are positive benefits overall.

8.8.16 Short-term effects during construction to water quality on sections of the River Mole where the existing channelised river is diverted into a new section of naturalised river channel, and where the connection to the Museum Field flood compensation area is made. However, longer term the effect is beneficial due to the naturalisation of the watercourse.

8.8.17 A precautionary approach has been taken assuming that deicer load increases proportionally with the increase in air traffic movements and increase in airfield pavement area. The Project provides infrastructure to fully retain or treat this additional load and the assessment therefore concludes that any impact on the water environment is negligible.

8.8.18 For groundwater, the hydrogeology of the area shows that the underlying strata are largely either secondary aquifers or unproductive strata. Potential impacts in construction and operation include the risk of pollution, diversion of groundwater flow, the introduction of new flow pathways, and alterations to recharge. All of the impacts identified can be mitigated to an acceptable level through good practices as embedded mitigation.

8.8.19 The impacts on the private airport wastewater system will be negligible, as upgrading works to accommodate the forecast increased inflows are to be constructed as part of the Project. Any impacts on the public sewerage conveyance and treatment facilities will be addressed by Thames Water in their forthcoming Development Impact Analysis and appropriate mitigation works may be considered if required.

8.8.20 For water supply the PEIR assessment shows that water demand will increase due to increase in passenger numbers through the existing site, during construction, and following completion of the terminal improvements and additional hotel and commercial facilities. The PEIR assessment indicates that this could be partially mitigated through introduction of water efficiencies during construction of new facilities. Following conversations with SES Water our provisional assessment is that forecast demands are unlikely to negatively impact the water source.

8.8.21 The PEIR assessment is conservative and does not take into account fully the commitments we have now made in our second Decade of Change programme. These commit the airport to reducing its potable water consumption by 50% on a per passenger basis by 2030 compared to 2019 and continue to improve the quality of water leaving the airport and work with partners to promote local water stewardship.

8.8.22 From the assessment undertaken of the potential impacts on all elements of the water environment, suitable mitigation has been proposed and it is concluded that there are no significant residual effects. We will continue to review the effects of the Project on the water environment including undertaking further quantitative and qualitative analysis and supported by more site-specific information and design detail.

Measures for reducing potential effects

8.8.23 The proposals seek to minimise effects to the water environment through the design of the Project and detailed mitigation methods and measures. These are discussed in **PEIR Chapter 11, Section 11.8** and are as summarised in **PEIR Figure 5.2.1e** Surface Water and Foul Water Improvements which is provided as Figure 3.5 in this document.

8.8.24 We continue to consult with stakeholders to develop the package of mitigation and enhancement measures.

8.8.25 The proposed mitigation measures for the Project relating to the water environment include:

- Provision of compensatory flood storage – flood compensation areas including measures to reduce their own impact
- Relocation and reconfiguration of impacted surface water attenuation facility (Pond A)
- Realignment of the River Mole
- New culvert design
- Provision for new airfield syphons to connect the floodplain on both sides of taxiways
- Surface access improvements drainage strategy
- Additional de-icer retention at Pond A
- Additional de-icer retention and/or retention at Car Park Y
- Wastewater system capacity upgrades
- Geomorphological mitigation for River Mole diversion channel
- Geomorphical mitigation for flood compensation areas and culvert extensions
- Water quality monitoring

8.9 Traffic and Transport

8.9.1 We have assessed the potential effects of the Project (including potential cumulative effects) on traffic and transportation. Our preliminary findings are set out in **Chapter 12 of the PEIR** and the Preliminary Transport Assessment Report (PTAR) in **Appendix 12.9.1 of the PEIR**.

8.9.2 Gatwick Airport is directly accessible from the national strategic road network via the M23 motorway, which runs north-south adjacent to the airport providing access to the M25 in about 10 minutes. Junction 9 of the M23 is the main access point, with an onward link of dual carriageway motorway (M23 Spur) to Junction 9a at the South Terminal roundabout. The A23, which runs parallel to the M23, connects south London and Croydon, via Redhill then Horley and Gatwick Airport, through Crawley and provides a strategic route through to Brighton.

8.9.3 Transport facilities within the airport boundary are made up of on-airport roads, forecourts and car parks, including facilities for coaches, taxis and car rental companies. We have recently completed works to improve the North Terminal forecourt and have implemented forecourt charging at both terminals for passenger drop off.

8.9.4 Gatwick Airport has a very high level of rail connectivity, with 20 trains to and from central London

in the morning peak hour (10 via London Bridge and 10 to London Victoria, of which four are Gatwick Express services). Direct services from Gatwick connect to a wide variety of destinations and Gatwick's railway station is the busiest in the South East (excluding London's main terminals and interchanges).

8.9.5 The airport is served by frequent bus and coach services at both North and South Terminals. The operators include Metrobus, National Express, Megabus, Oxford Bus Company, and easyBus. On average there are approximately 450 to 500 daily arrivals and departures, offering services to destinations throughout the UK.

8.9.6 There are off-road pedestrian and cycle links available, which provide access to the local catchment areas of Horley and Crawley. National Cycle Route 21 provides a continuous route between Crawley, Gatwick, Horley, Reigate and London. Route 20 continues south towards Brighton and Route 21 continues east towards Royal Tunbridge Wells before heading south towards Eastbourne.

8.9.7 Assessment of both the future baseline and Project effects includes analysis using a number of modelling tools. Details of our approach to modelling which includes strategic modelling work in consultation with Highways England and the relevant Highways Authorities, and a description of the current baseline environment can be found in Chapter 4 of this document.

Potential effects

8.9.8 We have assessed the extent to which the Project may have potential effects on traffic and transportation (including potential cumulative effects) both within the airport boundary and on national networks.

8.9.9 Our assessment shows that, given the existing high traffic flows on the highway network, the Project is not expected to generate substantial traffic flows beyond the local highways and main access points to the airport. However, due to redistribution effects, the strategic modelling work which we have undertaken shows some increases in traffic flows in areas such as Croydon during certain times of day, particularly during the interim assessment year 2032 but these are not significant and not related to trips arising from the Project.

8.9.10 We will undertake further investigations and modelling as part of the Environmental Statement. We are working with key stakeholders and Highway Authorities to inform this process.

8.9.11 Within the vicinity of the airport, there are segregated pedestrian and cycle routes which reduce the sensitivities of the highway links. The proposed Project highway works would improve pedestrian and cycle routes and reduce junction conflicts, which would improve safety and minimise the risk of accidents.

8.9.12 We expect the construction of highway improvements to take place after the main airport construction activities are complete. Construction would be undertaken with the aim of minimising disruption both to airport and local traffic.

8.9.13 The PEIR demonstrates that the majority of identified potential effects would not be significant. However, for a small number of road links, potentially significant effects on car drivers/passengers (in terms of driver delay) and, in one case, on pedestrians and cyclists (in terms of severance) have been identified.

8.9.14 We will consider these preliminary potential significant effects further as part of the Environmental Statement. We anticipate that with further mitigation measures being put in place, long-term effects would not be significant.

Measures for reducing potential effects

8.9.15 Where possible, we will avoid and minimise potential adverse effects arising from the Project on traffic and transportation.

8.9.16 We have incorporated a range of measures as part of our proposals to reduce the potential for significant effects on traffic and transport. These measures include highway improvement works to the North and South Terminal roundabouts, which involve grade-separated (flyover) solutions and widening of the eastbound M23 Spur to three lanes (if not already undertaken as part of short-term improvements).

8.9.17 In respect of the Longbridge roundabout, we are proposing an enhancement to increase lane widths, which will improve safety and provide extra capacity.

8.9.18 Other mitigation measures include the implementation of a Construction Traffic Management Plan and Travel Plan.

8.9.19 Our proposals take account of Gatwick's aspiration towards highly sustainable, low emission mode shares for passengers and staff. These targets have informed some of the measures and interventions used in our assessment. However, the assessment shows that mitigating the effects of the Project is not reliant/conditional on these targets being met in both the future baseline and with Project scenarios.

8.9.20 We will continue to monitor travel patterns to ensure the success of the Travel Plan and to implement measures to further encourage the use of sustainable modes of transport as part of the Airport Surface Access Strategy (see Chapter 4 of this document). Monitoring will be undertaken to assess the performance against targets in consultation with our Airport Transport Forum as part of our Airport Surface Access Strategy.

8.10 Air Quality

8.10.1 We have considered the potential effects of the Project on air quality. Our preliminary findings are set out in **Chapter 13 of the PEIR**.

8.10.2 Both Crawley Borough Council and Reigate and Banstead Borough Council have declared Air Quality Management Areas in their administrative areas due to exceedances of the annual mean nitrogen dioxide air quality standard.

8.10.3 The Horley AQMA encompasses an area of the south west quadrant of Horley near the airport. The Hazelwick AQMA encompasses the Hazelwick roundabout and areas along the adjoining roads; the A2011 Crawley Avenue, Hazelwick Avenue, the A2004 Northgate Avenue and Gatwick Road.

8.10.4 The Hazelwick AQMA is currently in the process of being extended to include the Three Bridges area, forming a single extended Crawley AQMA. This will add an additional area onto the south eastern 'arm' of the current AQMA.

8.10.5 Monitoring data for the continuous AQMA monitoring sites indicate that annual mean nitrogen

dioxide concentrations over the five-year period from 2015 to 2019 have consistently been below (within) the maximum levels permitted by the relevant air quality standard (i.e. no exceedances of the standard detected).

Potential effects

8.10.6 We have assessed the extent to which the Project may result in potential impacts (including cumulative effects) upon air quality having full regard to both construction and operational phases of the Project.

8.10.7 Our preliminary assessment indicates that with the implementation of appropriate mitigation, the effects of construction-related activities on dust soiling and human health are not anticipated to be significant. The mitigation measures are applicable throughout the construction phase which may occur beyond the initial construction phase in 2024-2029, through to 2038.

8.10.8 Our assessment model shows that during all future year scenarios (2024, 2029 and 2032) and for the 2038 design year (aircraft emissions only), no significant effects for air quality are anticipated as a result of the Project. Predicted pollutant concentrations at all receptors in the two AQMAs would be below the air quality standard (i.e. no exceedances are predicted) and the Project would therefore not create exceedances of the air quality standard in these areas.

8.10.9 An ecological assessment of the change in nitrogen dioxide concentrations and change in nitrogen deposition as a result of the Project has been undertaken for future year scenarios at sensitive ecological receptors. The change in nitrogen dioxide was assessed against the sites' capacity to adapt to change. No significant effects are anticipated at the ecological receptors due to the Project or due to cumulative effects with other schemes.

Measures to reduce potential effects

8.10.10 We will avoid and minimise potential adverse effects arising from the Project on air quality. We are proposing several air quality mitigation measures to ensure best practice is followed for all onsite activities during the construction phases of the Project. The measures from best practice guidance would be implemented through the Code of Construction Practice.

8.10.11 Proposed measures include:

- the development and implementation of a Dust Management Plan with mitigation such as water spraying, covering of dusty materials and the introduction of speed limits on site.
- use of low emission plant during construction of the Project. We are committed to mobile construction equipment meeting zero or ultra-low emission standards by 2030.
- a Construction Traffic Management Plan will be prepared to reduce construction traffic and minimise impacts on the highway network. Construction traffic routing will direct traffic through the M23 Junction 9 to avoid any routing through the M23 Junction 10 and Hazelwick AQMA.
- a Construction Workforce Travel Plan will be adopted which will include measures that encourage sustainable travel patterns.

8.10.12 Emissions from road traffic during the operation of the Project would be managed through the Airport Surface Access Strategy and the Travel Plan for Gatwick. Further information is provided in Chapter 4 of this document.

8.10.13 In relation to aircraft emissions on the airfield, the airport has provision for the use of fixed electrical ground power on any new stands thereby reducing the requirement for engine running on stands.

8.10.14 We are committed to all on-airport vehicles and ground support equipment meeting zero or ultra-low emission standards by 2030. The airport is using electric vehicles for airside operations.

8.10.15 We will also continue to carry out monitoring of air quality within the airport.

8.11 Noise and Vibration

8.11.1 **Chapter 14 of the PEIR** considers the potential Project effects from Noise and Vibration.

8.11.2 Noise levels from Gatwick Airport are reported annually from noise modelling carried out by the Environmental Research and Consultancy Department of the CAA. We engage with a range of stakeholders on a regular basis regarding noise issues.

8.11.3 The airport is served by a number of departure and arrival flight paths to the main runway. Aircraft land and take-off into wind for performance and safety reasons. Due to the prevailing wind conditions, the main runway is used in the westerly direction for approximately 75% of the time in a typical year.

8.11.4 We have assessed the impact of the Project on the following types of noise:

- construction noise and vibration – noise and vibration from temporary construction of the Project, including the use of construction compounds;
- air noise – noise from aircraft in the air or departing or arriving (including reverse thrust) on a runway, generally assessed to a height of up to 7,000 feet above ground level;
- ground noise – noise generated from airport activities at ground level including aircraft taxiing and traffic within the airport boundary; and
- road traffic noise – noise from traffic vehicles outside the airport on the public highway.

8.11.5 All four types of noise have been modelled based on forecasts of plant, road and types of airport traffic expected in the various assessment years. The noise and vibration assessment considers the likely significant effects arising from the construction and operation of the Project on:

- people, primarily where they live ('residential receptors') on an individual dwelling basis and on a community basis, including any shared community open areas;
- community facilities such as schools, hospitals, places of worship; and
- commercial properties such as offices and hotels, collectively described as 'non-residential receptors'.

8.11.6 To identify noise impacts, we are using a standard methodology which relates noise impact to the level of noise a receptor experiences:

- **LOAEL – Lowest Observed Adverse Effect Level:** this is the level above which adverse effects on health and quality of life can be detected.

- **SOAEL – Significant Observed Adverse Effect Level:** this is the level above which significant adverse effects on health and quality of life occur.

8.11.7 When predicted noise levels are above LOAEL thresholds, but below the SOAEL, other factors have been taken into account in determining whether the effect could be significant, such as the number of people affected, and the duration of the activity causing the noise impact in determining the significance of the noise effects.

8.11.8 The Project will give rise to changes in the noise environment, during construction, and then brought about through increased scale of operation, changes in airport and road layouts, and from the use of acoustic barriers. We have assessed the extent to which such changes may cause significant effects.

8.11.9 For air noise and airport ground noise, the extent of noise impacts is largely dependent upon the number and type of ATMs, but the Project also includes layout changes to the airport which affect air and ground noise impacts.

8.11.10 To allow for usage of the northern runway, all taxiing from, or to the western end of the runways, would take place on Taxiway Juliet, which is proposed to be moved slightly further north to provide a safe distance between the taxiway and the northern runway. The Project also requires an extension to Taxiway Lima, which would join up to Taxiway Juliet providing the main route for all aircraft taxing to or from the western end of the runways. It would be necessary to remove a bund at the western end of the northern runway to allow for alterations to the taxiways. This bund currently provides mitigation for ground noise affecting properties in the Charlwood area and it would be replaced with a longer combination of a bund and noise barrier.

8.11.11 We have assessed ground noise levels for aircraft and road traffic noise sources by reference to identified nearest Noise Sensitive Receptors (NSRs). The NSRs include the residential properties nearest to the new or altered road links and the amenity area in the Riverside Garden Park adjacent to the A23 and M23 roads.

Potential effects

Construction Noise and Vibration

8.11.12 The construction noise and vibration assessment is based on our current understanding of the likely works required to build the Project. At this stage, the exact methods of working have not been defined and therefore, in common with standard practice where there is uncertainty, a reasonable worst case has been adopted.

8.11.13 Construction noise has therefore been assessed based on the preliminary design of the works, making a series of worst-case approximations where necessary. Noise levels have been predicted for 13 phases of construction for the 12 individual years between 2024 and 2035 and the period 2036 to 2038.

8.11.14 Much of the work on the airfield would be required to be undertaken at night. This has potential to impact various communities outside the airport the perimeter, around Charlwood village, and in the area immediately south of the airport (Lowfield Heath). On the south side of Horley, night works are likely to be required to build the North and South Terminal junctions and alterations to Longbridge Roundabout.

8.11.15 Overall, the assessment results indicate that there is potential for adverse noise effects at approximately 150 properties during the day and approximately 500 during the night. The

potential for impacts arising from construction traffic requirements, and vibration effects from use of percussive piling to build the road junctions will be assessed in greater detail in the Environmental Statement.

8.11.16 Construction would be undertaken in accordance with a Code of Construction Practice (CoCP) which will set out the key management measures that contractors would be required to adopt and implement. These measures would be developed based on those identified during the EIA process to avoid and reduce effects as discussed in greater detail later below.

Air Noise

8.11.17 Air noise has the potential to affect residents, and other Noise Sensitive Receptors (NSRs) over a wide area beyond the airport boundary. The existing northern runway centreline is located some 198 metres north of the main runway centreline. The Project would increase the difference between the two runway centrelines by 12 metres.

8.11.18 The existing northern runway is currently only used when the main runway is unavailable; for example, due to maintenance work at night. In 2018, the northern runway was used by 3,543 flights, and in 2019 it was used for 2,842 flights. The Project would make alterations to the existing northern runway, resulting in increased use of this runway using the same flight paths for departures only.

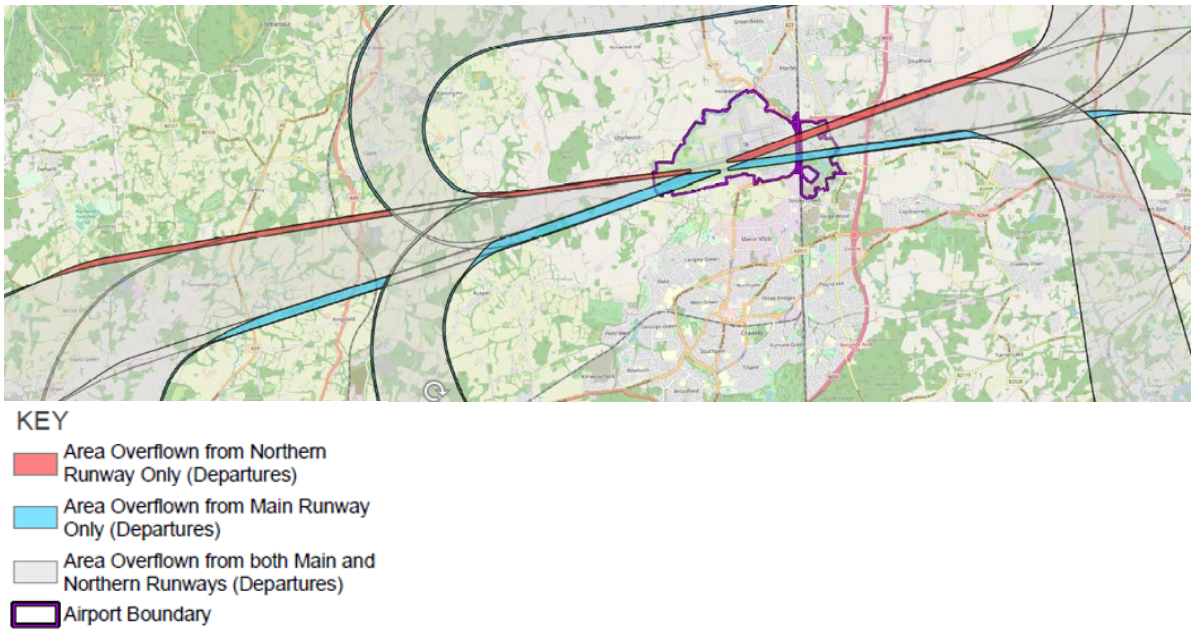
8.11.19 Mainly smaller aircraft (generally Code C) would use the northern runway when it is being used in dual operation with the main runway. Most aircraft would be above 1,000 feet before they leave the airfield.

8.11.20 We would operate flights from the northern runway using procedures designed to minimise noise impacts, in line with current processes and the commitments of our Noise Action Plan. At this stage, the noise modelling has assumed that use of the northern runway would be limited to the period 06:00-23:00 hours, avoiding scheduling flights in the majority of the more sensitive night-time period. We are not seeking to increase permitted numbers of movements and noise quota for the night quota period set by the Department for Transport.

8.11.21 The Project does not require new flight paths or airspace change to allow for dual runway operations. The tracks of aircraft departing from the northern runway would be almost indistinguishable from departures from the main runway after the point they intersect the turns on the departure routes.

8.11.22 Consequently, any noise impacts of the Project would largely be the result of increases in noise due to the increased number of flights on the northern runway, rather than new noise impacts over areas previously unaffected. This would therefore avoid most of the noise impacts often associated with new flight paths. **PEIR Figure 14.9.28** reproduced below as Figure 8.1, shows that the areas expected to be routinely overflown as a result of the Project are small.

Figure 8.1 : Flightpaths and Overflights for Main and Northern Runway)



8.11.23 The air noise modelling uses a number of noise metrics to characterise and quantify the changes brought by the Project. These are discussed in **Section 14.4 of the PEIR**, with the results of the assessment reported in **Section 14.9 of the PEIR** and associated figures.

8.11.24 The noise metrics used include:

- Primary noise metrics – Leq, 16 hour day and Leq, 8 hour night contours are used to quantify changes in community noise exposure in terms of populations affected and areas of noise contours, and likely significant effects on health and quality of life. Leq, 16 hour day and Leq, 8 hour night difference contours are used to show noise changes across the area (LOAEL and SOAEL are reported against these);
- Secondary Noise metrics – N65 day and N60 night contours are used to quantify changes in community noise exposure measured in terms of the numbers of noise events (above Lmax 65 dB and Lmax 60 dB) as populations affected and areas of noise contours.
- Lden and Lnight annual average noise contours are provided to illustrate noise changes over the entire year.
- Community Representative Locations – Noise levels in terms of primary and secondary noise metrics at these particular locations are used to describe in more detail how noise would change in terms of changes in Leq decibel levels and number of flights above Lmax 60 and Lmax 65 dB on average summer easterly and westerly operating days.
- Lmax 60 and 65 dB – footprints from a common aircraft type are plotted to illustrate how Lmax levels would change for departures from the northern runway compared to the main runway.
- Noise Sensitive Buildings – noise levels at schools, hospitals, places of worship and community buildings are considered to assess impacts on these non-residential noise sensitive buildings.
- Overflights – change in the numbers of overflights expected within a wider area up to 35 miles from the airport are estimated to inform those experiencing aircraft in the sky further from the airport.

8.11.25 The air noise modelling indicates that noise impacts would be greatest in the 2032 interim assessment year. Two future aircraft fleets referred to as the 'central case' fleet and 'slower transition case' fleet have been assessed for the 2032 and 2038 years. After this, the effect of the aircraft fleet shifting to quieter types outweighs the effect in increasing ATMs such that by 2038, the airport is expected be quieter in either fleet case.

8.11.26 The rate of fleet transition in the central case reflects our expectations of fleet improvements based on pre-Covid market trends, taking into account airlines' fleet procurement programmes and business models. The slower transition fleet case assumes that the rate of fleet transition is delayed by about five years. This is to reflect potential uncertainty brought by Covid or other disruption within the period which may affect airline fleet procurement plans.

8.11.27 The assumptions underpinning the slower transition fleet are shown below in Table 8.1 which is taken from **Appendix 14.9.5 in the PEIR - Table 8.11.1: Future Fleet Compositions**.

Table 8.1 : Future Fleet Compositions

Year	Central Case Fleet - % Next Generation Aircraft	Slower Transition Case Fleet - % Next Generation Aircraft
2019	13%	13%
2029	59%	40%
2032	82%	50%
2038	100%	82%

8.11.28 For the slower transition fleet, the effect of the 5-year delay is that by 2032 some 50% of the aircraft operating are future generation types increasing to 82% by 2038.

8.11.29 **PEIR Figure 14.9.1** summarises the changes in Leq day contour populations and areas for 2019, 2029, 2032, 2038 and 2047. It is reproduced below as Figures 8.2 and 8.3:

Figure 8.2 : Leq, 16 hour Day Contour Populations: 2019, 2029, 2032, 2038 and 2047

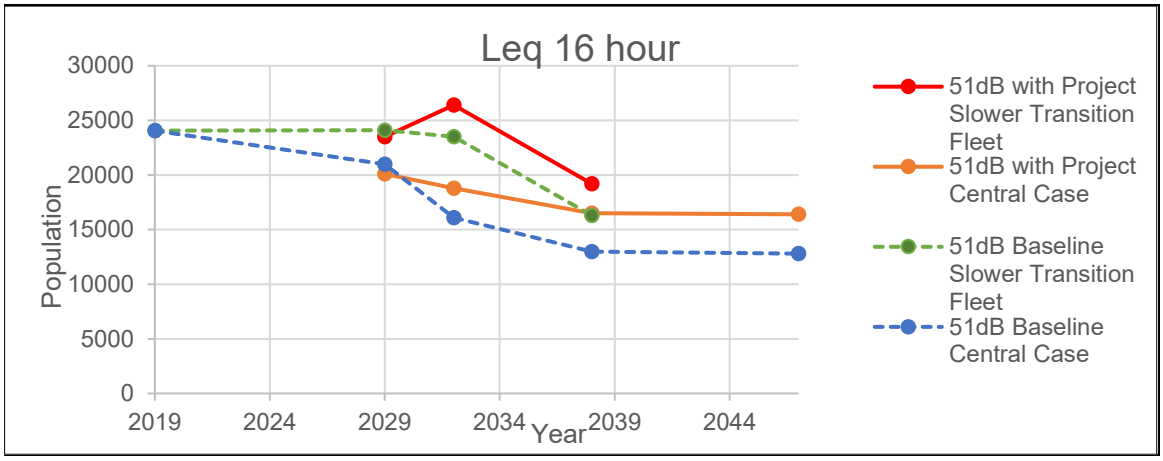
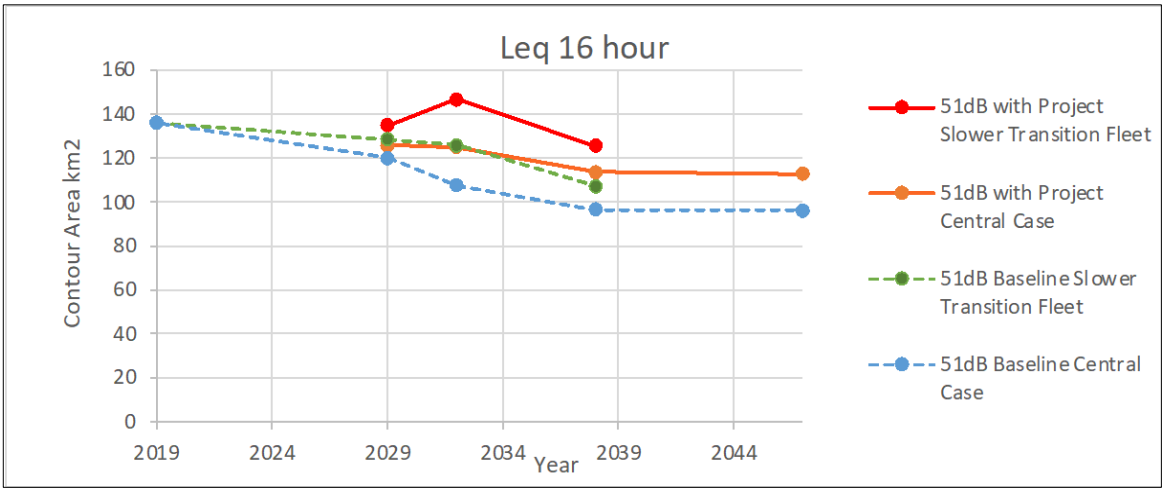


Figure 8.3 : Leq, 16 hour Day Contour Areas: 2019, 2029, 2032, 2038 and 2047



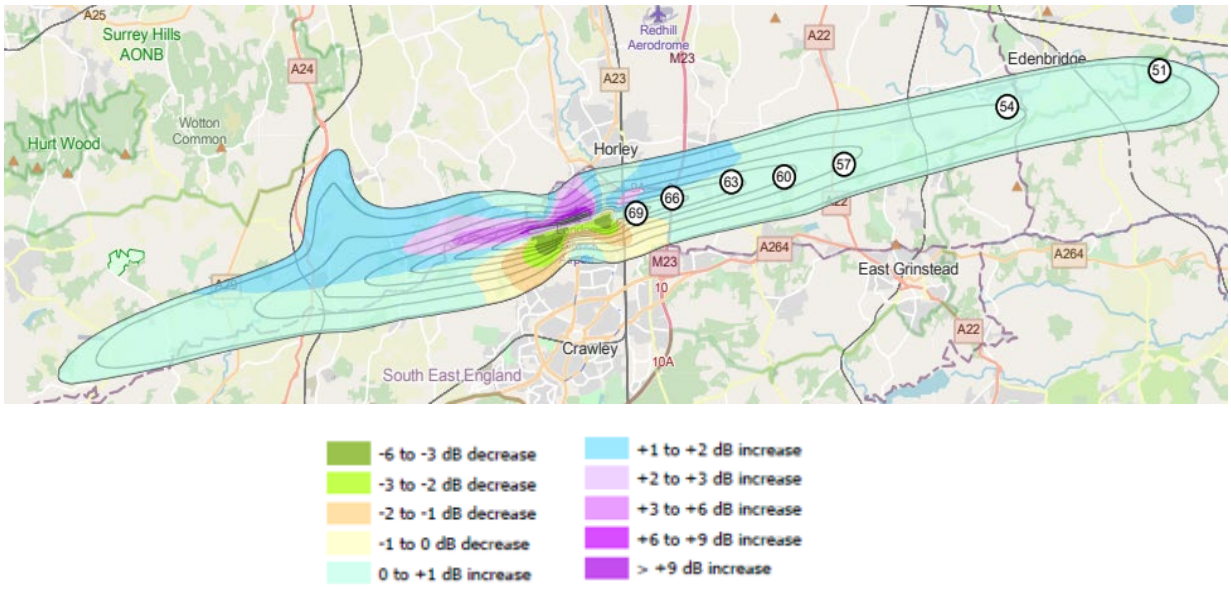
8.11.30 For Environmental Impact Assessment (EIA) the most important comparison is to assess future years with and without the project. In 2032, the population within the SOAEL Leq, 16 hour day 63 dB contour is predicted to rise from approximately 400 to 500 in the base case (ie the future year without the project) to approximately 500 to 600 with the Project. Thus, the Project is expected to result in significant adverse effects on health and quality of life in the daytime for about 100 people, and mitigation is proposed through the Inner Zone Noise Insulation Scheme to avoid these effects (see later below). In context, the population within the 2019 Leq, 16 hour day 63 dB contour was around 500, thus only in the case of a slower transition fleet would numbers increase above those in 2019.

8.11.31 In 2032, the population within the daytime LOAEL Leq, 16 hour day 51 dB contour is predicted to rise from 16,100 to 23,500 in the base case to 18,800 to 26,400 with the Project and remain below the 24,050 in 2019 except in the slower transition fleet case. Again, with reference to the the 2019 operation, the number of people within the 2019 51Leq contour was 24,050, and thus the airport with the Project is expected to be quieter in the central case than in 2019, but slightly noisier than 2019 if the slower transition fleet was to occur.

8.11.32 In summary, the Project is predicted to increase the population within the LOAEL Leq, 16 hour day 51 dB contour by 2,700 to 2,900 people in 2032 over the case where the Project did not occur. However, for the majority (61 to 68% for daytime and 97 to 99% for night-time) of those affected the noise changes would be less than 1 dB and therefore negligible. Approximately 1,800 to 4,900 people living to the south of the airport would see noise levels reduce, with 1,200 to 4,300 of these being negligible (<1 dB) and about 600 low (1-3 dB).

8.11.33 Figure 8.4 below shows the change in Leq 16 hour daytime noise between the 2032 future baseline and the predicted noise with the Project.

Figure 8.4 : Air Noise 2032 Leq 16 hour Day Change



8.11.34 **PEIR Chapter 14 Table 14.9.1** reproduced as Table 8.2 below summarises the changes within the noise bands and identifies the locations affected. The ranges of areas and population numbers given relate to the central and slower transition fleet cases.

8.11.35 Noise changes at night would be lower than during the day because it is assumed that the current night restrictions would continue to cap aircraft numbers in the 23:30-06:00 hours period. In 2032, the population within the SOAEL Leq, 8 hour night 55 dB contour is predicted to rise from approximately 900 to 1,100 in the base case, by approximately 160 with the Project. Mitigation for this increase is proposed through the Inner Zone NIS to avoid these effects. The areas within the day and night SOAEL contours overlap so that the total number of people within the day or night SOAEL contour due to noise increases from the Project in 2032 is approximately 200 people, all of which are within the NIS Inner Zone.

Table 8.2: Changes in Leq, 16-hour Day Noise Levels; 2032 With Project Versus 2032 Baseline

Noise Change Band Leq, 16 hour Day dB	Area (km^2)	Population	Comment
-6 to -3	0.5 - 0.9	-	Lowfield Farm on Charlwood Road and mostly within the airport boundary south of the main runway.
-3 to -2	1.2 – 1.4	<100	Approximately 20 houses on Charlwood Road, Poles Lane and Bonnetts Lane south of the airport.
-2 to -1	2.8 – 2.8	500	South of the airport on Charlwood Road, Bonnetts Lane and houses on the north tip of Ifield near the Crawley Rugby Club.

Noise Change Band Leq, 16 hour Day dB	Area (km^2)	Population	Comment
-1 to 0	4.7 – 6.4	1,200 – 4,300	South west of the airport in the area of Ifield Wood Road west of Ifield, and in the Tinsley Green area (Radford Road, Balcombe Road, Forge Wood) south east of the airport.
0 to +1	83.6 – 96.7	12,800 – 16,000	East of the airport (excluding an area around Smallfields) and west of the airport south of the extended runway centerline including Rusper and Kingsfold. The northern part of Charlwood, north of Horley Road.
+1 to +2	25.2 – 32.6	4,800 – 6,500	West of the airport north of the extended runway centerline including the southern part of Charlwood and Capel. East of the airport north of the extended runway centerline including parts of Smallfield.
+2 to +3	4.0 – 4.2	300 - 400	West of the airport north of the extended runway centerline including parts of Russ Hill Road, Ifield Road and Partridge Lane to the South of Charlwood.
+3 to +6	2.1 - 2.3	<100	Mainly within the airport. Approximately 20 properties on Ifield Road approximately 1 km west of the airport boundary and approximately 20 properties in Russ Hill approximately 2 km west of the airport.
>+6	0.8	0	Within the airport.

Assessment of air noise effects to noise sensitive buildings

8.11.36 The assessment has identified 50 noise sensitive community buildings within the Leq, 16 hour day 51dB noise contour in 2029. These include 21 schools, one hospital, 18 places of worship and 7 community buildings.

8.11.37 At two places of worship in Crawley, noise levels are expected to reduce by 1-2 dB. At a further 42 buildings, noise levels are predicted to either decrease or increase by less than 1 dB, ie a negligible increase, as a result of the Project compared to the 2032 baseline, with low increases of 1-2 dB at the others. A Noise Insulation Scheme would be developed for any school adversely affected as discussed later below.

Changes in number of overflights

8.11.38 Beyond the noise contours, the extent to which the number of overflights below 7,000 feet would change have been computed to give stakeholders further from the airport information on how many more aircraft would overfly them as a result of the Project.

8.11.39 **PEIR Figures 14.6.7 to 14.6.9** show the baseline modelling of overflights in 2018, with Figure 14.6.7 showing all flights within 35 miles of Gatwick below 7,000 feet above ground level. In Figure 14.9.29 the number of Gatwick flights has been increased by 20% on the 2018 value while keeping all other 2018 baseline parameters (non-Gatwick flights and their airspace routings) the same. The 20% increase in flight movements equates to approximately the increase to 2032

traffic levels (see **PEIR Appendix 14.9.2 for** details).

8.11.40 Areas under the arrivals and departure routes close to Gatwick would experience the full 20% increase in Gatwick flights. In areas away from the extented runway centrelines this would not be the case.

8.11.41 The overflights analysis has been used in the **PEIR Chapter 8: Landscape, Townscape and Visual Resources** assessment of tranquillity and in the **PEIR Chapter 7: Historic Environment** assessment of impacts on sensitive heritage assets.

Ground Noise

8.11.42 Ground noise from aircraft taxiing and within the airfield has been modelled. The changes to Lima and Juliet taxiways and the planned intensification of use mean that a large number of taxiing aircraft would be routed further north and west compared with operations today, potentially bringing ground noise sources closer to properties in the direction of Charlwood.

8.11.43 The increase in numbers of aircraft and the addition of taxiways closer to neighbouring properties to the north has the potential to lead to noise increases, and mitigation has been incorporated including bunding approximately 8 metres in height situated at the western end of northern runway, and noise barriers approximately 10 metres high adjoining the bund installed at the western end of the northern runway and running for approximately 500 metres just to the north of the relocated Juliet Taxiway.

8.11.44 The results show predicted ground noise impacts are not significant at the majority of the represented receptors studied, with moderate adverse effects at three of the 12 receptor areas. The effects rated as moderate are considered significant and these are predicted in the Charlwood and Povey Cross areas and the area immediately south of the airport, at a total of approximately 90 properties. These are conservative estimates that will be further refined in the Environmental Statement.

8.11.45 The majority of the NSRs around the airport perimeter that may be adversely impacted by ground noise are within the areas covered by the current or proposed NIS (see below). The 10 properties where SOAEL may be exceeded are within or close to the Inner Zone scheme boundary. The Inner Zone scheme will be modified as necessary when the environmental assessment is completed, so that significant effects on heath and quality of life are avoided.

Road Traffic Noise

8.11.46 The remodelling of the Longbridge, North Terminal and South Terminal roundabouts and associated highways works have potential to increase noise levels in the adjacent Riverside Garden Park and residential area. Noise barriers have been incorporated in the elevated sections of new highway. These would ensure that at most receptors, including within the park, noise levels would reduce as a result of the Project.

8.11.47 Further modelling of traffic forecasts will be undertaken and reported in the Environmental Statement, the numbers of properties affected by the different noise changes will be assessed and is likely to conclude that the benefits are of negligible or minor significance in most areas.

8.11.48 Noise levels on other roads not part of the highway works could be changed by traffic changes

resulting from the Project. Initial modelling indicates these noise changes would be insignificant, and further modelling will be carried out and reported in the Environmental Statement.

Measures for reducing potential effects

Construction Noise and Vibration

8.11.49 A variety of mitigation measures are proposed to reduce the potential noise impacts, including reducing noise at source through quieter methods of working, screening, limiting hours of work and, as a last resort, noise insulation. A noise insulation scheme for construction noise would be developed to mitigate any predicted impacts so as to avoid significant effects of health and quality of life. The initial predictions suggest that night-time impacts may be sufficient to require this type of mitigation; this will be reviewed based on refined project information and mitigation in the ES.

8.11.50 An outline CoCP has been developed, to deliver the mitigation measures through the construction contract, and will be refined as the EIA process continues to ensure that all adverse noise effects are mitigated as far as practicable.

8.11.51 Noise insulation would be offered for qualifying buildings, to be defined in the detailed CoCP. Noise insulation or, if other measures are not possible temporary re-housing would avoid residents being significantly affected by levels of construction noise inside their dwellings. The assessment reported in the Environmental Statement will provide an estimate of the buildings that are likely to qualify for noise insulation or to qualify for temporary rehousing, if any.

Air Noise

Noise Envelope 

8.11.52 The ongoing noise abatement measures adopted by the airport are summarised in **Section 14.8 of the PEIR** and **Section 4 of PEIR Appendix 14.9.2** and are included in the base case noise modelling for each of the 2019 base and future assessment years. Whilst this suite of noise related actions will reduce noise impacts in the future, depending on the rate of fleet transition, and other factors, they may not in themselves prevent noise impacts greater than that modelled in the “slower transition” case.

8.11.53 We are therefore proposing to commit to a noise envelope to provide certainty to all stakeholders that air noise levels in the future would never be worse than those arising from the slower transition fleet and to commit to this envelope decreasing over time to cap noise exposure below that experienced in 2019, even with this proposed airport expansion. A series of noise envelope options have been reviewed as discussed in **Appendix 14.9.5 of the PEIR** and a noise envelope based on limiting noise exposure was selected as performing best overall.

8.11.54 The proposed noise envelope limits are as follows:

- By the end of the first year after opening of the reconfigured Northern Runway pursuant to the Project, and thereafter, the area enclosed by the 92-day summer season average mode noise contours produced by the CAA shall not exceed the following:

  - Leq 16 hour day 51 dB: 146.7 km^2
  - Leq 8 hour night 45 dB: 157.4 km^2

- By the end of the first year in which annual commercial ATMs exceed 382,000, and thereafter, the area enclosed by the 92 day summer season average mode noise contours produced by the CAA shall not exceed the following:

  - Leq 16 hour day 51 dB: 125.7 km^2
  - Leq 8 hour night 45 dB: 136.1 km^2

8.11.55 The area of the Leq day and night contours will not exceed the limits above, and the noise envelope would provide certainty to the community that noise levels will be limited and will reduce in the future as the airport grows so as to share the benefits of that growth and new technologies with the community.

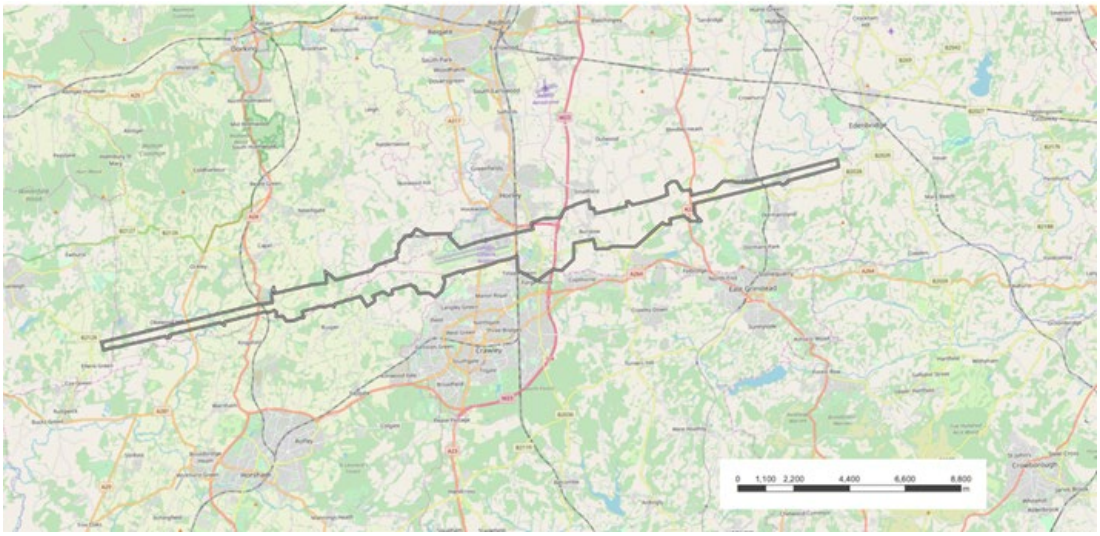
8.11.56 The proposed noise envelope could represent a noise related operating restriction under UK Regulation 598 so we have undertaken a review of the proposal in accordance with the Regulation and its annexes. This is provided in **Appendix 14.9.5 of the PEIR**. We are seeking your views on the proposed noise envelope as part of this consultation.

8.11.57 We will report on performance within the noise envelope in our annual noise performance reporting and set in place internal management processes to forecast performance in the years ahead so as to pre-empt potential non-compliance and put in place operating practices and measures to reduce noise before an exceedance arises. Such measures would be subject to further consultation with industry and community stakeholders if they trigger the requirements of UK Regulation 598.

Air Noise Insulation Scheme (NIS)

8.11.58 The current Gatwick NIS was based on a Leq16hr 60dB contour forecast in 2014, with 15km extensions to cover areas under the extended runway centreline and adjusted to accommodate various residential areas. At the time of its introduction in 2014, this was seen as one of the most innovative schemes in the UK and exceeded the then existing Government policy that noise insulation should be provided at levels of Leq 63dB. Approximately 2,000 homes are covered by this scheme which is shown in Figure 8.5 below.

Figure 8.5 : Current Gatwick Noise Insulation Scheme



8.11.59 An enhanced NIS will be introduced for the Project to address expected increases in air noise between the base and with-project cases and to offer additional mitigation for the housing already worst affected by noise. The scheme will include measures to assist those newly within the highest noise areas to move home and allow for interventions in the most noise affected schools. Full details can be found in the Noise Insulation Scheme document submitted as part of this consultation.

8.11.60 We intend to continue to use the Leq noise metric to set a new boundary for our NIS. However, we propose to enhance the existing NIS by introducing new outer and inner NIS zones which will offer a tiered noise insulation package depending on the noise experienced at the location. Those living closer to the airport and experiencing higher levels of noise, will benefit from a more extensive insulation package than those living further away.

8.11.61 We expect the largest Leq contour area to occur in about 2032. After 2032, airline fleet changes are expected to result in the introduction of quieter aircraft which over time will result in a progressive reduction of the noise footprint, even though the total number of aircraft movements will increase. As such, we propose to use the forecast 2032 Leq contour area to set the geographical boundary for our enhanced NIS. By taking the 'worst-case' assessment year, it ensures a conservative approach is taken to the revised NIS footprint and so provides robust noise impact mitigation.

8.11.62 We propose that the inner zone should be based on the predicted Leq 16 hr 63dB daytime and Leq 8 hr night 55dB summer noise contours for 2032. The inner zone would be formed on the larger of these, the Leq 8 hr night 55dB, which fully encloses the Leq 16 hr 63dB daytime contour. These noise levels have been assessed to be threshold levels where noise effects to health and quality of life to residents would become significant if noise insulation was not provided. We propose that people living in these areas should be able to apply for a full package of noise insulation.

8.11.63 For the new outer zone, we intend that the daytime Leq 16 hour 54 dB contour be used as the outer boundary. This goes significantly further than what emerging Government policy proposes should be required for a standard airport NIS.

8.11.64 The proposed outer zone covers a significantly larger area than the existing single-tier scheme, however, in a few areas the existing scheme extends a little further from the airport than the proposed outer zone where its boundary was drawn to match the patterns of settlement on the ground. We have taken the view that we should nevertheless include these areas within our revised scheme, despite the forecasts indicating they would not experience noise levels of greater than the Leq 16 hour 54dB limit. Our outer zone proposal will provide for noise insulation and ventilation to noise sensitive rooms and is also open to people who have accessed the previous scheme, where additional insulation or ventilation would provide benefit.

8.11.65 We propose that the new scheme would commence at the time construction of the Northern Runway Project begins so that properties can be appropriately modified before the reconfigured northern runway becomes operational.

8.11.66 The proposed NIS zones are shown in **Figure 14.8.1 of the PEIR** and below in Figure 8.6:

Figure 8.6 : Proposed Noise Insulation Zones

8.11.67 Unlike the present scheme, the new NIS Inner Zone would offer noise insulation sufficient to avoid noise levels above the SOAEL (Leq, 16 hour 63 dB and Leq, 8 hour 55 dB). The highest noise levels forecasts, for 2032, predict the following dimensions to these contours for the slower transition fleet case:

- Leq, 16 hour day 63 dB: 13.9 km2, approx. 600 people, 250 households; and
- Leq, 8 hour night 55 dB: 20.7 km2, approx.1,200 people, 450 households.

8.11.68 The NIS Inner Zone is formed by the larger of these, the Leq, 8 hour night 55 dB contour, which fully encloses the Leq, 16 hour day 63 dB contour. The NIS Inner Zone is shown as the yellow contour line in the figure above for the slower transition fleet case. Residential properties within this zone would be offered noise insulation in the form of replacement acoustic glazing or internal secondary glazing to all windows, acoustic ventilators and blinds to noise sensitive rooms (bedrooms, sitting rooms, dining rooms and studys), and replacement doors to noise sensitive rooms if necessary. Additionally, the offer would include acoustic upgrading of bedroom ceilings

where practicable if they are found to be allowing more noise intrusion than the closed acoustic glazing provided. Overall properties in this new Inner Zone would receive a significantly improved level of noise mitigation.

8.11.69 The new NIS Outer Zone would provide for homes within the forecast Leq, 16 hour 54 dB daytime noise contour in 2032.

8.11.70 The new Outer Zone is shown blue in Figure 8.6 above. Approximately 3,300 homes are predicted to be within this zone and outside the Inner Zone. In this zone noise levels are modelled below SOAEL and residents would be offered acoustic ventilators to noise sensitive rooms. This would allow windows to remain closed with ventilation, which, with modern double-glazed windows, would increase the sound attenuation of the window by more than 10 dB. . For properties with older single glazed windows with poor acoustic performance, double glazed windows will be offered to noise sensitive rooms in addition to ventilators to ensure equivalent levels of protection.

Schools Noise Insulation Scheme

8.11.71 A new Schools NIS is proposed for all schools with noise sensitive teaching spaces within the forecast 2032 Leq, 16 hour 51 dB noise contour. Where schools are concerned that aircraft noise could be affecting teaching, each classroom area would be surveyed to assess the effects of all types of noise including local road traffic. If noise insulation measures, such as improved glazing and acoustic air ventilation, where found to be required, then we would work with the school to deliver a suitable noise insulation package.

Home Relocation Assistance Scheme

8.11.72 In order to offer home owners the option to move from the areas most affected by the highest noise levels from the Project, home owners newly within the Leq 16 hr 66 dB noise contour as a result of the Northern Runway Project coming into operation would be offered a package to assist them in moving should they choose to do so.

Ground Noise

8.11.73 Mitigation is proposed as part of the Project on the airport boundary where practicable to do so, as a combination of new earthwork bunding and acoustic barriers. These would be provided to the west of the airfield where changes in the taxiway infrastructure would be affected as a result of the Project. Additionally, very large buildings, such as the Boeing Hangar and new buildings proposed would themselves act as noise barriers.

8.11.74 At night when there are less aircraft it would be possible to adopt different taxi-routings to reduce taxiing closest to residential areas to the west. The measures that have been designed into the Project to reduce the potential for impacts on sensitive receptors affected by aircraft ground noise are:

- Earthworks, bunding at least 8 metres in height situated at the western end of northern runway.

- Noise barriers approximately 10 metres in height adjoining the bund installed at the western end of the northern runway and running for approximately 500 metres just to the north of the relocated Juliet taxiway.

Road Traffic Noise 

8.11.75 A number of measures have been designed into the Project to reduce the potential for impacts from traffic noise as set out in **Section 14.8 of the PEIR**. These are:

- 2 metre noise barrier stretching along the A23 on the edge of Riverside Garden Park.
- 1 metre noise barrier along the North Terminal roundabout flyover elevated section (facing Riverside Garden Park).
- 1 metre noise barrier along the South Terminal roundabout flyover elevated section, north side.

8.11.76 Overall, with the inclusion of the noise barriers described above the road modifications are expected to reduce noise levels slightly, resulting in a negligible impact.

8.12 Climate Change and Carbon

8.12.1 We have considered the potential effects of the Project in terms of climate change and carbon. Our preliminary findings are set out in **Chapter 15 of the PEIR**. The chapter includes a preliminary assessment of the impact of the project on greenhouse gas (GHG) emissions. It also considers how resilient the Project will be to climate change impacts and the combined effects of the Project and potential climate change impacts on the receiving environment.

Potential Effects

Greenhouse Gas Emissions

8.12.2 We strongly support the UK Government in taking a lead by setting a carbon budgeting process and also becoming the first country in the world to set a legally binding net zero commitment for greenhouse gas emissions in 2050, both of which now include the UK's share of international aviation emissions. The Sixth Carbon Budget, covering the period 2033-37, was adopted by the UK Government in 2021. It formally includes emissions from international aviation within the overall target of 965 million tonnes of carbon dioxide equivalent (MtCO2e).

8.12.3 The adoption of a net zero target in the UK under the Climate Change Act has recently been reflected for the transport and aviation sectors in the publication of the Transport Decarbonisation Plan (2021)[25] and the accompanying Jet Zero consultation[26], which sets out the proposal to introduce a trajectory to Net Zero for the UK aviation sector.

8.12.4 The Jet Zero consultation reaffirms the Government's view that international connectivity provided

[25] Department for Transport: 'Transport Decarbonisation Plan' (July 2021) - https://www.gov.uk/government/publications/transport-decarbonisation-plan
[26] Department for Transport: 'Jet Zero Consultation : A Consultation on our Strategy for Net Zero Aviation' (July 2021) - www.gov.uk/government/consultations/achieving-net-zero-aviation-by-2050

by UK aviation is vital to the country's long term economic prosperity, and that growth in aviation is not incompatible with meeting the UK's greenhouse gas reduction targets. The Government considers that growth in aviation can be reconciled with its net zero commitment through a combination of improvements and acceleration in aircraft and airspace technology and efficiency; deployment of sustainable aviation fuel, which could be derived from a number of routes including from waste or bio resources; development of electric or hydrogen (or hybrid) aircraft especially for domestic or short haul flights; and further net reductions in carbon through offsets or carbon removals. The consultation confirms the Government's commitment to working with industry and relevant sectors to help deliver these initiatives. Proposals for mandating the use of sustainable aviation fuels are also subject to a separate consultation[27].

8.12.5 We recognise the necessity and importance of supporting the implementation of net zero aviation; are committed to low-carbon growth and are ready to continue to play our part in this process.

8.12.6 The assessment of the effect of the Project on GHG emissions provides estimates of emissions during the construction and operational phases. Construction phase emissions include emissions arising from the extraction, processing and manufacture of construction materials; transportation of these materials; the energy and water used during construction processes; transport and disposal of waste; and transport of construction workers. Operational emissions include emissions from aircraft on the ground and in flight; surface access emissions from carrying passengers, staff and freight; and those from the energy and fuel used in the operation of airport buildings, vehicles, plant and equipment.

8.12.7 The assessment made so far does not yet reflect any of the potential mitigation measures that will be deployed to reduce these emissions to appropriate levels. It is therefore very much a worst case assessment, as it does not take into account expected changes in aircraft innovation and technology (such as hydrogen, electric, or hybrid aircraft which are expected to be introduced over time for some domestic and short haul flights), or any allowance for uptake of sustainable aviation fuels (which are expected to be in increasing use as part of the sectoral transition to net zero GHG emissions).

8.12.8 The assessment predicts that emissions in the 2038 assessment year would be 1.387 $MtCO2_e$ higher due to the project (7.575 $MtCO2_e$ v 6.188 $MtCO2_e$). Emissions from aircraft operations (such as energy and fuel used at the airport) is predicted to reduce, but emissions from flights are predicted to increase by 1.315 $MtCO2_e$ (7.061 $MtCO2_e$ v 5.746 $MtCO2_e$) and therefore account for 95% of the increase. Surface access emissions would increase by 0.075 $MtCO2_e$ (0.457 $MtCO2_e$ v 0.382 $MtCO2_e$) and therefore account for 5% of the increase.

8.12.9 The UK has not yet adopted carbon budgets for the period beyond 2037. However, the Sixth Carbon Budget, which includes international aviation, has been confirmed for the period 2033-37 as 965 $MtCO2_e$. Based on a five-year budget the annual average budget for this period is 193 $MtCO2_e$. Compared to the last year of the Sixth Carbon Budget (2037), the in-scope emissions (domestic and international) for the Project in 2038 - estimated as 7.575 $MtCO2_e$ – would be

[27] Department for Transport: 'Mandating the use of Sustainable Aviation Fuels in the UK' (July 2021) - https://www.gov.uk/government/consultations/mandating-the-use-of-sustainable-aviation-fuels-in-the-uk

equivalent to 3.9% of the national emissions target for that year with the increase over the baseline (1.387 $MtCO2_e$) representing 0.7% of the budget.

8.12.10 The Committee on Climate Change, the Sustainable Aviation coalition (of which Gatwick is a Council member) and the Jet Zero consultation, set out a range of different scenarios for future aviation which adopt different modelling assumptions on aviation growth, engine efficiencies, and use of alternative fuels. The PEIR does not explore in any detail the range of potential scenarios out to 2050, and the relative impacts of different measures to decarbonise aircraft emissions. The potential effects of these scenarios, all of which anticipate reductions in aviation emissions compared to the preliminary assessment we have undertaken, will be further explored in the next stage of our work, and can be expected to show a marked reduction in predicted emissions.

8.12.11 In line with current EIA Guidance on Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2017), which advises that all new emissions arising from development are significant due to their permanent cumulative nature, our assessment considers that greenhouse gas emissions arising from the Project would be significant.

8.12.12 Aviation is likely to remain one of the sectors with residual emissions by 2050, albeit in the context of a wider net zero economy which relies on offsets and GHG removals to achieve overall Net Zero. At this stage it is not considered that the scale of increased emissions from the Project will impact upon the ability of the UK to meet its carbon targets given the range of mechanisms whereby emissions can be reduced, and offset, and assuming that sufficient progress across Government and industry to deliver the innovation, infrastructure, and supply chains to reduce emissions from aircraft.

Climate Change Resilience

8.12.13 The preliminary climate change resilience assessment identified several risks as being high or very high during the construction and operational phase of the Project, for example the increased number of very hot days brings the risk of overheating in temporary building accommodation for construction workers, or passengers and staff in operational and terminal buildings.

8.12.14 A number of measures have been designed as embedded mitigation as part of the other environmental topics which would also reduce the potential for impacts in terms of resilience (e.g. flood risk mitigation). With such measures in place, our preliminary assessment indicates that significant effects are unlikely.

8.12.15 No significant effects have been identified through the in-combination climate change impacts assessment for the construction or operational phases of the Project.

Measures for reducing potential effects

8.12.16 We have commenced the work needed to explore the further actions we need to take to fully play our part in supporting and accelerating the reduction in carbon emissions as part of both our current operations and with our proposed Northern Runway Project. This includes our second Decade of Change commitments to achieve 80% reduction on 1990 Scope 1 and 2 emissions by 2030, our longer-term goal to achieve ‘net zero’ on these before 2040, and playing our part in supporting the transition of UK aviation and ground transport to net zero.

8.12.17 We are now developing a detailed Carbon and Climate Change Action Plan, to sit alongside updated energy and transport strategies, to enable us to continue to reduce carbon emissions associated with the airport (including Scope 3 emissions, such as surface access and aircraft emissions). Our intention is to publish the draft Action Plan as part of our submission for development consent next year, setting out how we will achieve reductions in the emissions over which we have direct control and how we intend to influence and guide reductions in emissions in the control of our partners.

8.12.18 The Action Plan will set out the measures and actions we propose to take including:

- To continue to reduce our direct Scope 1 and Scope 2 emissions, including from the power and energy used on site and in our operational vehicle fleets and equipment.
- Further investment in directly connected renewable energy supply.
- Progressively transitioning from carbon offsetting to UK-based carbon removal for residual Scope 1 greenhouse gas emissions.
- The measures that will need to be taken to adapt the airport to further support our airlines, tenants, other business partners and passengers in cutting their emissions. This will include enabling infrastructure required for airlines to operate electric and alternative fuelled aircraft and the power and distribution systems to support electric vehicles and ground support equipment, including hydrogen and electric charging systems.
- Low and zero carbon design and performance standards that will be applied to the new infrastructure we propose to build, including ensuring that renewable energy infrastructure will be incorporated into designs.
- Measures to ensure best practice in reducing greenhouse gas emissions throughout the construction process, including the use of low embodied carbon construction materials, re-use of recycled waste materials, deployment of low and zero carbon construction plant and equipment and the management of construction transport.
- Further measures to facilitate the move to low carbon operations, e.g. through airport charges and enhanced information sharing on passenger choices for journeys to and from the airport.
- How we propose to monitor, report and review progress against our plan and its alignment with the Government's carbon budgeting process.

8.12.19 In respect of adaptation and resilience to the effects climate change, a number of measures will be incorporated into the project ranging from ensuring that the cooling and ventilation systems in the design of new buildings are sufficient to deal with projected higher peak temperatures, to ensuring that increased risk of flooding risk is mitigated through flood attenuation works that are incorporated into our proposals.

8.13 Socio-Economics

8.13.1 **Chapter 16 of the PEIR** considers the potential socio-economic effects of the Project during the construction and operational phases.

8.13.2 Socio-economics is a broad topic that includes the assessment of multiple effect types such as new employment, implications for the labour market and population and disruption to business and community activities. These socio-economic effects are closely linked with economic effects reported in the **Oxera Report,** which has been summarised in Chapter 7 in this document,

together with other PEIR chapters including **Chapter 12 - Traffic and Transport, Chapter 14 - Noise and Vibration, Chapter 17- Health and Wellbeing**, and **Chapter 18 - Agricultural Land Use and Recreation**. The socio-economic effects are summarised below with refence to these other documents.

8.13.3 Four study areas have been assessed as shown in Figures 8.7 and 8.8 below:

- **The Airport / Project Site Boundary** (Figure 8.7)
- **The Local Study Area** (Figure 8.7) – encompassing the whole of Crawley and parts of Horsham, Mid Sussex, Mole Valley, Reigate & Banstead and Tandridge and some smaller settlements located near to the Project site boundary such as Charlwood and Hookwood. These settlements represent the areas where receptors are most likely to be affected by the Project during construction and operation.
- **The Labour Market Area** (outlined in red in Figure 8.8) - the area from which Gatwick Airport draws the majority of its operational workforce and can be expected to in the future. It therefore represents the wider extent of where impacts linked to the economic and labour market effects of the Project may impact upon receptors. It includes the 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 labour market area also fall within the South Downs National Park Authority.
- **The wider 'Five Authorities Area'** (coloured green in Figure 8.8) - incorporating the County areas of East Sussex, West Sussex, Surrey, Kent and Brighton and Hove (Unitary Authority).

8.13.4 These study areas are cumulative, so the wider areas incorporate the smaller areas.

8.13.5 A desk study has been undertaken to identify the existing (pre-pandemic) and future socio-economic conditions within each of the study areas.

Figure 8.7 : Airport/Project Boundary and Local Study Areas for the Socio-Economic Assessment

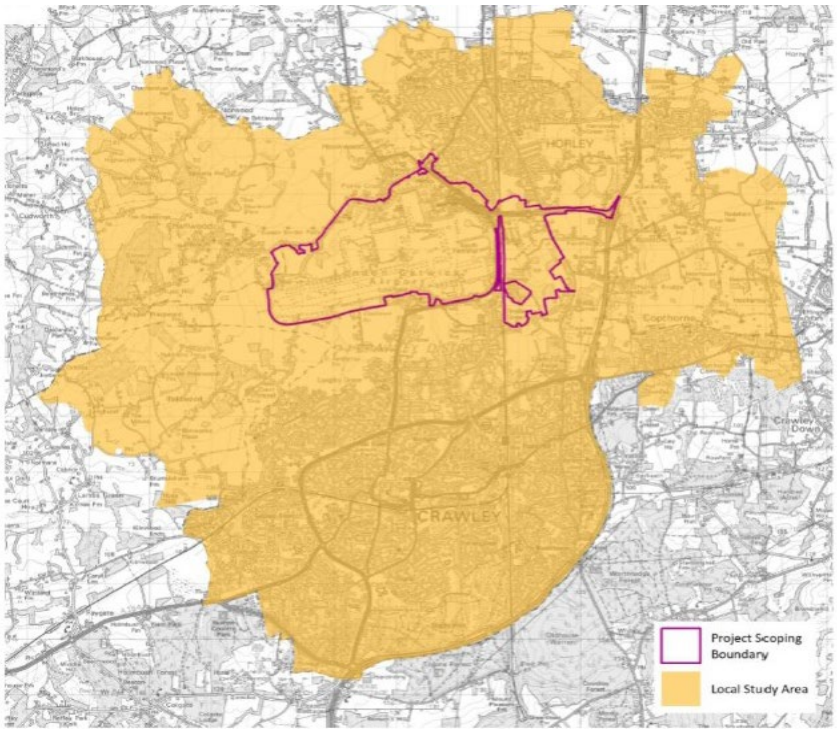


Figure 8.8: Study Areas for Socio Economic Assessment

8.13.6 The local study area, has seen an increase in its total population of 6.7%, growing from 140,798 to 150,244 over the period from 2011- 2019. The population of the labour market area increased by 6.4% over the same period, with the largest growth among residents aged 65 and over, and the lowest growth in the working-age population (people aged 16-64) at 17.6% and around 3% respectively.

8.13.7 In total, there were 111,000 jobs within the local study area in 2019. In the labour market area, there were an estimated 1,055,377 people in employment in 2019, while the equivalent in the five authorities' area was 2,335,127 people.

8.13.8 In 2020, workplace earnings (the earnings of those who work in an area, i.e. earnings associated with jobs in an area) are lower than resident earnings (the earnings of those who live in an area) across the labour market area and five authorities area. This suggests that those who live in these areas generally commute out of the area to better paid jobs elsewhere – the most likely location of these being in London.

8.13.9 Our analysis shows that mean workplace earnings in the labour market and five authorities' area were all lower than the equivalent resident earnings values as of 2020. The mean values of workplace earnings in the labour market area for full-time workers and total workers were lower than in the five authorities' area, while part-time earnings were higher in the labour market area. Whilst current trends suggest a pattern of out-commuting to higher paid jobs, this may change in the future as workplace earnings across both areas have been growing at higher rates than resident earnings.

8.13.10 Indices of Multiple Deprivation (IMD) measures deprivation across neighbourhoods nationally across seven domains; income, employment, education, health, crime, barriers to housing and services and living environment. The area with the highest levels of deprivation (being ranked in the top 30% most deprived areas nationally) in the local study area is in the south west of Crawley. Looking across the wider labour market area shows that most districts suffer with deprivation to some degree; this is typically (but not exclusively) focused in urban areas, particularly in Croydon and parts of Brighton and Hove.

8.13.11 Looking at housing, the average price of dwellings sold in the local study area was £319,098 in the year to September 2020, representing an increase of 20% between 2015-2020 and 53% since 2010. House prices in the five authorities' area vary widely between authorities ranging from £230,000 in Hastings to £600,000 in Elmbridge.

8.13.12 In 2011, there were 57,531 dwellings in the local study area. In 2019, the total housing stock in the labour market area and five authorities' area equated to 918,755 and 1,945,531 dwellings respectively.

8.13.13 We have identified 17 community spaces within the local study area. These serve a range of functions and include local community-owned or operated community centres and public halls, halls or centres owned by or connected to places of worship and halls connected to local Scout or Brownie clubs.

8.13.14 There are also a number of open spaces, including public parks and gardens within the local study area. A total of 217 designated open spaces (equating to approximately 544 hectares of open space) are identified within the local study area. Two of these open spaces are within the Airport/Project Site Boundary - St. Bartholomew's Church Grounds to the north of the A23 and a tennis court located in Buckingham Gate car park within the airport. In addition, a small part of the Riverside Garden Park, just north of the A23, on the southern edge of Horley falls within the site boundary.

Potential effects

8.13.15 We have identified several potential significant beneficial effects including significant beneficial effects through construction and operational employment created by the Project:

- The increase in construction employment would generate a temporary beneficial and significant effect in the local study area over the period 2024-2032. Furthermore, our assessment shows that the Project would generate additional construction jobs which can be filled by the existing and projected labour supply within the labour market area.
- There would also be significant permanent beneficial effects on employment and supply chains in the local study year from 2029 onwards.

8.13.16 We have assessed potential for significant adverse effects as follows:

- Loss of open space including potential from improvements to the North Terminal Roundabout from 2029 which could lead to the permanent loss of a narrow strip of land some 5m wide and less than one hectare in size on the southern edge of Riverside Garden Park. The planned provision of new areas of open space in the vicinity of the Park will mitigate this impact in addition to further enhancements to remaining open space provision.

- Disruption to business and residents (e.g. through changes to traffic and noise levels) within the project boundary from construction in 2032 and over the period 2033 to 2037 but no significant effects are expected in most cases. It is proposed to mitigate these through a plan to manage construction works.

- Moderate adverse effects on the mabour market in the local study area in the interim assessment and final design years. These effects would be mitigated by the **Outline Employment, Skills and Business Strategy** which will also enhance potential employment opportunities.

8.13.17 In all cases, mitigation would reduce the adverse effects to not significant.

8.13.18 An Assessment of Population and Housing Effects has been undertaken to understand whether the Project would lead to a need for provision of additional housing to that which is already planned (see **Appendix 16.6.2 of the PEIR**). The analysis shows that the Project would not increase the need for housing over and above what is already planned for by neighbouring local authorities, and that there would be no need to make specific provision for additional housing in response to the Project's job creation.

8.13.19 We have assessed most of the developments identified which could potentially result in cumulative effects and which are estimated to be completed during the early stages of the Project's construction. We expect, the construction activity generated by the other proposed developments is unlikely to overlap with the Project. In addition, most of the operational effects for the Project are considered to remain valid and unchanged by the inclusion of the cumulative developments across all the assessment phases.

Measures for reducing potential effects

8.13.20 A number of measures have been designed into the Project to reduce the potential for socio-economic impacts.

8.13.21 Replacement open space for the possible loss of a corridor of land on the edge of Riverside Garden Park is included within our proposals.

8.13.22 We are proposing to adopt a Code of Construction Practice which will include measures to ensure construction contractors and processes follow practices that minimise disruption to residents and local businesses. This includes measures such as construction traffic management, set hours of work and alternative access routes. This will inform the preparation of detailed mitigation measures for any other adverse effects on local businesses and the community for the duration of the Project construction phase. The Code of Construction Practice will also detail measures for community engagement.

8.13.23 We are committed to community investment through the Gatwick Airport Community Trust and related initiatives which could help provide funding for communities most impacted by the Project during construction and operation phases.

8.13.24 Appropriate compensation would be provided to adversely affected stakeholders to help mitigate effects such as business displacement and the viability of community facilities and services during construction of the Project.

8.13.25 We will adopt an Employment, Skills and Business Strategy to address the effects on local labour market. It would also enhance the potential beneficial employment impacts of the Project and provide opportunities for local businesses to benefit through the supply chain and through local procurement initiatives. Our **Outline Employment, Skills and Business Strategy** is submitted with this consultation and is summarised in Chapter 7 in this document.

8.14 Health and Wellbeing

8.14.1 We have considered the potential effects of the Project on health and wellbeing. The details of our assessment including methodology are provided in **Chapter 17 of the PEIR.**

8.14.2 Our assessment draws from other technical topic assessments, most notably; traffic and transport; air quality; noise and vibration; and socio-economic effects.

8.14.3 The age structure in the local and wider study area[28] is relatively top-heavy, with a higher proportion of the population aged 5 to 14 years and 40 to 80+ years, and a lower proportion of the population aged 15 to 34 when compared to the national average. Total population growth in the local and wider study areas between the years of 2011 and 2019 have exceeded the national average by 0.7% and 0.6%, respectively.

8.14.4 Male and female life expectancy and healthy life expectancy (i.e. the amount of years spent in good health) in the local study area are both higher than the regional and national averages. Life expectancy and healthy life expectancy for males and females in the wider study area are also higher than the national average but are more comparable to the regional average.

8.14.5 We have an airport-based paramedic on-site between the hours of 06.00 and 00.00. The paramedic is supported by 290 staff members who are trained to provide first aid, which excludes first aiders located in every commercial outlet with between 5-50 members of staff. In addition, there is a total of 56 Automated External Defibrillators located within the airport. As such, the airport is well prepared to respond, treat, and if required call for emergency assistance from the South East Coast Ambulance Trust. An example of the existing effectiveness of treatment is that Automated External Defibrillators treatment success rate is more than six times greater than the national average.

Potential effects

8.14.6 Our preliminary assessment of potential effects applies a broad socio-economic model of health that encompasses conventional health impacts such as disease, accidents and risk, along with wider socio-economic health determinants vital to achieving good health and wellbeing.

8.14.7 Overall, no significant health and wellbeing effects (adverse or beneficial) have been identified for the initial construction phase.

[28] The local study area for health-specific baseline statistics focuses on the local authority districts of Crawley, Reigate and Banstead, Tandridge, Mid Sussex, Horsham and Mole Valley. The wider study area comprises the County areas of East Sussex, West Sussex, Surrey, Kent and Brighton and Hove Unitary Authority ('Five Authorities Area')

8.14.8 Potential health and wellbeing effects from changes in environmental health determinants assessed (i.e. air quality and transport nature/flow rate) during the construction phase are considered to be minor adverse on the basis that impacts would generally be temporary, intermittent and managed through the implementation of best practice construction methods.

8.14.9 In addition, health and wellbeing effects from changes in exposure to temporary lighting have been explored but predicted to have no change on the basis that no residential receptors would be impacted.

8.14.10 The first full year of runway opening (2029) and the interim assessment year (2032) would include a combination of construction and operation-related health and wellbeing effects. Health and wellbeing effects associated with environmental determinants (i.e. air quality, noise and transport) would not be significant. Similarly, we have assessed that there would be no significant change in exposure to temporary or permanent lighting for residential receptors. Effects from changes in lifestyle factors would remain minor beneficial and not significant. However effects from increased indirect and induced job opportunities expected to be provided by 2032 would have moderate beneficial health and wellbeing effects which would be significant.

8.14.11 In 2038 (operation only), health and wellbeing effects associated with environmental determinants would not be significant. Operational employment opportunities (direct, indirect and induced) would reach their peak and continue to have moderate beneficial health and wellbeing effects, which are considered to be significant. There would no longer be a northern runway project construction workforce, so any changes to healthcare capacity would be limited to emergency call outs associated with increased passenger throughput which would not be significant on the basis that we would manage any change internally.

8.14.12 Our preliminary assessment indicates that there is no potential for significant cumulative effects at present.

Measures for reducing potential effects

8.14.13 Where possible, potential adverse effects arising from the Project on health and wellbeing will be avoided and minimised.

8.14.14 Generally, proposed mitigation measures adopted as part of the Project focus on limiting environmental precursors to preclude adverse health outcomes. As a result, any adopted mitigation measures are detailed within the relevant topics (as assessed by the PEIR) sections, including the Code of Construction Practice.

8.14.15 On-site health care would be provided for construction workers to avoid any potential adverse impact on the local health care system.

8.14.16 We propose a number of enhancement measures to be implemented as part of the Project including, as set out in Chapter 7 in this document, an **Outline Employment Skills and Business Strategy**, providing for a series of training, employment and procurement initiatives that would aid in addressing existing local barriers to a range of employment opportunities locally.

8.15 Agricultural Land Use and Recreation

8.15.1 We have considered the potential effects of the Project on agricultural land use and recreational resources, including areas of public open space, public rights of way and other linear recreational routes during its construction and operational phases. The conclusions of our assessment are provided in **Chapter 18 of the PEIR.** Specifically, the chapter assesses the potential effects on the following resources:

- agricultural land quality and soils;
- farm holdings;
- public rights of way;
- national cycle routes;
- other walking, cycling and horse-riding routes; and
- public open space.

8.15.2 Agricultural land lies to the north, west and south of the Airport. This land is of varying quality. The proposals include the development of some agricultural land including for the environmental mitigation measures proposed. There are several agricultural land holdings that may be affected by the Project. Much of the local bedrock of this land comprises Weald Clay.

8.15.3 Our assessment indicates most of this agricultural land is of lower quality Subgrade 3b. The agricultural land affected by the Project is predominantly used for grassland-based livestock agriculture.

8.15.4 There are a number of public rights of way within the Project site boundary, including the National Cycle Route 21 (NCR21) which provides an important non-vehicular route between Horley, Crawley and Gatwick Airport for use by cyclists and walkers. The main promoted walking route close to Gatwick Airport is the Sussex Border Path. Near the Airport, the Millennium Trail largely follows the same route as the Sussex Border Path and finishes at the Riverside Garden Park.

8.15.5 Riverside Garden Park in Horley is designated as an urban open space of high value and forms part of the Riverside Green Chain. Riverside Garden Park comprises public open space bounded to the north by the Gatwick Stream and features areas of woodland and a man-made lake.

8.15.6 A total of seven land holdings, including land owned by Gatwick Airport, could be permanently affected by the Project.

Potential effects

8.15.7 Overall, the assessment indicates there will be no significant effects to agricultural land sse and recreation as a result of the Project.

8.15.8 During the initial construction phase (2024-2029) there would be a temporary agricultural land take associated with the start of construction phase for the improvements to the South terminal roundabout. This would affect an area of land immediately to the north of the existing South Terminal roundabout. Within this area there would be a temporary loss of approximately 3.3 hectares of lower quality Subgrade 3b land. Also associated with these temporary works at South Terminal roundabout, there would also be temporary disruption to a single holding which is let on a short-term arrangement for horse grazing and hay production.

8.15.9 During the initial construction phase, there would be permanent land take of approximately 13.2 hectares of agricultural land associated with the development of surface parking on Pentagon Field, the provision of the flood compensation area in Museum Field and a strip of land north of the existing South Terminal roundabout. These areas comprise entirely lower quality Subgrade 3b land and their loss is not considered to be significant.

8.15.10 Some permanent loss of agricultural land holdings would occur during the initial construction phase of the Project (2024-2029). This is not considered to be significant.

8.15.11 No further effects on agricultural land resources are anticipated beyond the construction phase.

8.15.12 During the initial construction phase (2024-2029), there is the potential for disruption to access along the Sussex Border Path and public footpaths 367, 367Sy and 368 as a result of the commencement of the new grade separated junction to serve the South Terminal. It is proposed to fence and maintain the Sussex Border Path along its current alignment and, if necessary, temporarily divert the northern part of public footpath 367Sy that falls within the construction compound and that section that currently runs to the south of the M23 Spur. In addition, it is proposed that a number of public access improvements would be implemented to provide health and well-being benefits to the local community and the public generally, including the provision of new circular recreational route around the flood compensation area to the east of Museum Field, with a link to the existing alignment of the Sussex Border Path.

8.15.13 There is also the potential for the disruption to the existing public footpath that runs along the boundary of the Pentagon Field during the construction activities associated with the new surface car parking. It is proposed that this route is maintained along its existing alignment outside the perimeter fencing on the construction site for the safety of pedestrians.

8.15.14 The temporary effects on public rights of way during construction are assessed to be of minor adverse significance, and the overall effect on recreational routes and facilities during operation is assessed to be of permanent minor beneficial significance.

8.15.15 The improvement works associated with the proposed new grade separated junction to serve the North Terminal may potentially encroach into the southern fringe of Riverside Garden Park. If they did, this could potentially result in the permanent loss of approximately 0.75 hectares of public open space within these areas and would impact on a section of the Sussex Border Path to the south of the A23. There would be no change to the alignment of NCR21 within the south eastern corner of Riverside Garden Park and under the existing A23 during the construction works. However, there is the potential for some changes to the amenity of the route in this location (see **Chapter 8 of the PEIR**).

8.15.16 Works to the Longbridge Roundabout are anticipated to take place between 2030 and 2032. These may impact on the southern perimeter of areas of public open space (St Bartholomew's Church and the former Horley Anderson Centre and Playing Fields) to the north of the A23 and east of the River Mole.

8.15.17 Taking these factors into account, the effect on Riverside Garden Park is assessed to be of permanent moderate adverse significance and the effect on the Sussex Border Path is assessed to be of permanent minor beneficial significance.

8.15.18 No further effects on recreational resources are anticipated after the construction period and no likely cumulative effects are identified.

Measures for reducing potential effects

8.15.19 A number of measures have been designed into the Project to reduce the potential for impacts on agricultural land use and recreation. Mitigation measures include:

- New areas of public open space would be created if necessary, totalling a minimum of 0.75 hectares or equivalent to the area of public open space which may be lost as a result of the Project
- A commitment would be given towards improvements/enhancements within Riverside Garden Park in counsultation with Reigate and Banstead Borough Council
- Provision of a permanent diversion for the affected section of the Sussex Border Path to the south of the A23 arising from the new North Terminal Roundabout which would be put in place prior to the commencement of construction works
- Provision of a pedestrian link between the footway on the northern side of the A23 footway near the Longbridge Roundabout into Riverside Garden Park
- Provision of an additional pedestrian route linking Riverside Garden Park with the Sussex Border Path to the north of the A23
- New areas of public open space would be created totalling a minimum of approximately 0.1 hectares (or an area equivalent to the total loss of public open space), with links to the existing area of Riverside Garden Park, St Bartholomew's Church and the former Horley Anderson Centre and Playing Fields, and the residential areas of Horley to the north and east
- Provision of a new recreational route around a new flood mitigation area provide a circular route opportunity to local communities with the aim of promoting health and wellbeing

8.15.20 These mitigations will result in minor temporary effects on public rights of way during construction with an overall longer term minor beneficial effect on recreational routes and facilities.

9 Compulsory Acquisition and Compensation

9.1 Compulsory Acquisition

9.1.1 Gatwick Airport Limited owns or is in control of most of the land needed to deliver the Project.

9.1.2 The DCO will include provisions for the additional land to be aquired compulsorily, with the appropriate compensation being made available to those property or landowners who are affected. However, before having to resort to this process, we are committed to trying to reach an appropriate agreement with all affected landowners wherever practical.

9.1.3 Compensation for any compulsory acquisition of land or rights in land would be paid according to legislation that regulates the procedures for compensation following compulsory purchase.

9.2 Statutory Compensation

9.2.1 Property owners and occupiers of property who are affected by our proposals but which are not subject to compulsory acquisition may be entitled to compensation in respect of a loss of value of a property arising from the development during construction (under the Compulsory Purchase Act 1965) and for loss of value arising from the operation of an expanded airport (under Part 1 of the Land Compensation Act 1973).

10 Next Steps

10.1 How We Will Use Your Feedback

10.1.1 Your views are important and will help shape our future plans.

10.1.2 We will consider all responses and feedback received to inform the further development of our plans and environmental assessments. We will also use your comments to produce a Consultation Report which will be submitted with our DCO application. This report will explain how we have responded to all the feedback received during this consultation.

10.1.3 By responding to our consultation, your personal data is being collected by GAL and its consultants for use in connection with the consultation process and subsequent DCO application for the Northern Runway Project. Your response to this consultation may be published (in whole or in part) as part of our consultation programme (including any personal details if included in the response). We will not otherwise publish personal details or publicly attribute a response to an identified individual. We will not use your personal data for any other purposes.

10.1.4 Your response could be made available (with your personal details) in due course to the relevant planning or local authority or Government body, so that they can take it into account. Although not directly within our control, we will request that your personal details are not made publicly available by them and in any event, they will be required to comply with their legal obligations under applicable privacy laws.

10.2 Timeline

10.2.1 Once we have considered your responses and finalised our plans, we will make a DCO application for the Northern Runway Project to the Planning Inspectorate. Prior to submitting the application, we may decide to carry out further consultation on our proposals including those areas where we have decided to materially change our proposals in response to feedback received from this consultation.

10.2.2 The Planning Inspectorate will process and examine the DCO application, including encouraging the submission of views from interested parties, before making a recommendation to the Secretary of State who will make the final decision on whether or not to grant consent. Our expected approximate timeline going forward is:

- **From December 2021 - Consideration of Consultation Feedback** – we will consider responses and further develop our proposals.
- **Spring 2022 to Autumn 2022 - Prepare the DCO –** we will continue to engage with key stakeholders and consider feedback leading to the scheme being fixed and the Environmental Impact Assessment being finalised.
- **Late 2022 - Submit the DCO application to the Planning Inspectorate**
- **2023 - Examination of the DCO -** at this stage, the Examining Authority examines the application. This examination must be completed within six months and is primarily conducted through written representations; however, hearings can also be held. There will

be an opportunity to make representations about the application to the Planning Inspectorate.

- **2024 - Examining Authority's Recommendation to the Sectretary of State for Transport** - during this stage the Examining Authority has three months to write its recommendation and submit it to the Secretary of State.

- **2024 - Decision made by the Secretary of State for Transport** - the Secretary of State has three months to make a decision whether or not to grant consent.

Glossary

Term	Description
ACL	Airport Coordination Limited
AEP	Annual Exceedance Probability
AGL	Above Ground Level
ALC	Agricultural Land Classification
AOD	Above Ordnance Datum
APF	Aviation Policy Framework
APU	Auxiliary Power Units
AQMA	Air Quality Management Area
ASAS	Airport Surface Access Strategy
ATM or ATMs	Air Traffic Movement(s): Commercial landings or take-offs of aircraft engaged in the transport of passengers, freight or mail on commercial terms (i.e. scheduled, charter and dedicated freighter flights)
BSI	British Standards Institute
CAA	Civil Aviation Authority
CAP1616	CAA Airspace Change: Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information
CARE	Central Area Recycling Enclosure facility
CBC	Crawley Borough Council
CCAs	Climate Change Allowances
CCC	Committee on Climate Change
CEA	Cumulative Effects Assessment
CIRIA	Construction Industry Research and Information Association
CITB	Construction Industry Training Board
CO_2	Carbon dioxide
CoCP	Code of Construction Practice
CRoW	Countryside and Rights of Way
CTMP	Construction Traffic Management Plan
dB	Decibel
DCO	Development Consent Order
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DMP	Dust Management Plan
DMRB	Design Manual for Roads and Bridges
EA	Environment Agency
EAT	End around taxiway
EIA	Environmental Impact Assessment
eILS	Enhanced Instrument Landing System
ES	Environmental Statement
EASA	European Aviation Safety Agency

Term	Description
ETS	Employment and Training Strategy
EU	European Union
FASI	Future Airspace Strategy Implementation
FCA	Flood Compensation Area
FDI	Foreign Direct Investment
FRA	Flood Risk Assessment
FTE	Full Time Equivalent
GAL	Gatwick Airport Limited
GACT	Gatwick Airport Community Trust
GATCOM	Gatwick Airport Consultative Committee
GDP	Gross Domestic Product
GCN	Great Crested Newt
GHG	Greenhouse Gas
GIP	Global Infrastructure Partners
GIS	Geographical Information System
GNMG	Gatwick Noise Monitoring Group
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GOG	Gatwick Officers Group
GPU	Ground Power Unit
GSE	Ground Support Equipment
GVA	Gross Value Added
HER	Historic Environment Records
HGV	Heavy Goods Vehicle
HIA	Health Impact Assessment
HRA	Habitats Regulations Assessment
ICAO	International Civil Aviation Organization
ICCI	In-combination Climate Change Impacts
IDL	International Departure Lounge
IEMA	Institute of Environmental Management and Assessment
ILS	Instrument Landing System
IMD	Indices of Multiple Deprivation
ITTS	Inter Terminal Transit System (or Shuttle)
L_{Aeq}, 16 hours	The L_{Aeq} over the daytime and evening period 07:00 to 23:00 hours, for aircraft noise for an average summer day between 16 June and 15 September. In this report all noise levels are A-weighted and in places the A is omitted for simplicity written $L_{eq, 16\ hour}$
L_{Aeq}, 8 hours	The L_{Aeq} over the night period 23:00 to 07:00 hours, for aircraft noise for an average summer night between 16 June and 15 September. In this report all noise levels are A-weighted and in places the A is omitted for simplicity written $L_{eq, 8\ hour}$

Term	Description
$L_{Aeq, T}$ - Equivalent Continuous Sound Level	The L_{Aeq} level gives a single figure to describe a sound that varies over a given time period, T. It is the A-weighted steady sound level that would result in the same sound energy at the receiver as occurred in practice with the varying level. It is derived from the logarithmic summation of the sound signal and so unlike a conventional (linear) average it gives additional weighting to higher levels.
LLC	Low Cost Carrier
LEP	Local Enterprise Partnership
LLFA	Lead Local Flood Authority
L_{max}	The L_{max} s is the highest value of the sound level over the specified period. It is sometimes referred to as 'peak' noise level. However, the term 'peak' has a special meaning in acoustics and the expression 'maximum' is preferable to avoid confusion. The 's' stands for slow response, which is the metric usually used for aircraft noise. In this report all L_{max} levels are A-weighted.
LNR	Local Nature Reserve
LOAEL	Lowest Observed Adverse Effect Level
LTO	Landing and Take-off
LTP	Local Transport Plan
LVIA	Landscape and Visual Impact Assessment
LWS	Local Wildlife Site
mbgl	Metres below ground level
MHCLG	Ministry of Housing, Communities and Local Government
MMP	Materials Management Plan
mppa	million passengers per annum
MRF	Materials Recovery Facility
MSA	Mineral Safeguarding Area
MSCP	Multi-storey car park
$MtCO2_e$	million tonnes of carbon dioxide equivalent
N60 night	Numbers of aircraft during an average summer night above L_{max} 60 dB
N65 day	Numbers of aircraft during an average summer day above L_{max} 65 dB
NATMs	Non-Commercial Air Traffic Movements: Landings or take-offs of aircraft movements, excluding ATMs. Includes positioning flights by commercial operators, business aviation and recreational / military flights
NaTMAG	Noise and Track Monitoring Advisory Group
NATS	National Air Traffic Services
NCR	National Cycle Route
NDL	North Downs Line
NERL	NATS En Route
Net Zero	Net zero refers to a state in which the greenhouse gases going into the atmosphere are balanced by removal out of the atmosphere
NHS	National Health Service
NIS	Noise Insulation Scheme
NMB	Noise Management Board
NN NPS	National Networks National Policy Statement
NNR	National Nature Reserve

Term	Description
NO_2	Nitrogen dioxide
NOEL	No Observed Effect Level
NOx	Nitrogen oxides
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
NPR	Noise Preferential Route
NPS	National Policy Statement
NPSE	Noise Policy Statement for England
NPV	Net Present Value
NQP	Night Quota Period
NSAfC	National Skills Academy for Construction
NSIP	Nationally Significant Infrastructure Project
NSR	Noise Sensitive Receptor
NTS	Non-Technical Summary
NVZ	Nitrate Vulnerable Zone
ODPM	Office of the Deputy Prime Minister
OESBS	Outline Employment, Skills and Business Strategy
ONS	Office for National Statistics
OS	Ordnance Survey
Overflight	An aircraft overflying a receptor on the ground at a height of less than 7,000 ft above the ground and at an angle of at least 48.5 degrees from the horizontal, as defined by CAP1498
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PM_{10} and $PM_{2.5}$	Particulate matter
PRA	Preliminary Risk Assessment
PRoW	Public Right of Way
PS	Pumping Station
PTAR	Preliminary Transport Assessment Report
SAF	Sustainable Aviation Fuel
SASH	Surrey and Sussex Healthcare NHS Trust
SATURN	Simulation and Assignment of Traffic to Urban Road Networks
SERTM	South East Regional Transport Model
SESW	Sutton and East Surrey Water
SgZ	Safeguard Zone
SFRA	Strategic Flood Risk Assessment
SNCI	Site of Nature Conservation Importance
SO_2	Sulphur dioxide
SOAEL	Significant Observed Adverse Effect Level
SoCC	Statement of Community Consultation
SPA	Special Protection Area
SPD	Supplementary Planning Document

Term	Description
SRN	Strategic Road Network
SSSI	Site of Special Scientific Interest
STEM	Science, Technology, Engineering and Mathematics
STW	Sewage Treatment Works
SuDS	Sustainable Drainage Systems
SWMP	Surface Water Management Plan
TAMs	Total Aircraft Movements = ATMs and NATMs
TfL	Transport for London
TW	Thames Water
UK	United Kingdom
UKCP	UK Climate Projections
UKCP	United Kingdom Climate Predictions (2009 and 2018)
UKCP18	UK Climate Predictions 2018
UXO	Unexploded Ordnance
WCA	Wildlife and Countryside Act
WebTAG	Web based Transport Appraisal Guidance: https://www.gov.uk/guidance/transport-analysis-guidance-webtag\
WFD	Water Framework Directive
WHO	World Health Organization
ZoI	Zone of Influence
ZTV	Zone of Theoretical Visibility

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