GATWICK AIRPORT DRAFT MASTER PLAN 2018

YOUR LONDON AIRPORT
Gatwick

CONTENTS

PLANS

Plan 1
Global Destinations

Plan 2
Gatwick's location in the region

Plan 3
Local Council administration

Plan 4
Location plan

Plan 5
Key features

Plan 6
Land use

Plan 7
Surface water drainage features

Plan 8
Landscape and biodiversity assets

Plan 9
Airport Layout – 2022

Plan 10
Planned developments – Boeing Hangar

Plan 11
Planned developments – Pier 6 Extension

Plan 12
Planned developments – Gatwick Station

Plan 13
Surface access key features

Plan 14
Air Noise Map.
Leq Contours – Summer Day – 2017

Plan 15
Air Noise Map.
Leq Contours – Summer Night – 2017

Plan 16
Air Noise Map.
Leq Contours – Summer Day – 2022

Plan 17
Air Noise Map.
Leq Contours – Summer Night – 2022

Plan 18
Airport Layout. Main runway – 2032

Plan 19
Airport Layout.
Standby and main runway – 2032

Plan 20
Airport Layout. Additional runway

Plan 21
Safeguarded Land. Additional runway

Plan 22
Surface Access. Additional runway

Plan 23
Air Noise Map. Main Runway –
Leq Contours – Summer Day – 2028

Plan 24
Air Noise Map. Main Runway –
Leq Contours – Summer Night – 2028

Plan 25
Air Noise Map. Main Runway –
Leq Contours – Summer Day – 2032

Plan 26
Air Noise Map. Main Runway –
Leq Contours – Summer Night – 2032

Plan 27
Air Noise Map. Standby and Main Runway –
Leq Contours – Summer Day – 2028

Plan 28
Air Noise Map. Standby and Main Runway –
Leq Contours – Summer Night – 2028

Plan 29
Air Noise Map. Standby and Main Runway –
Leq Contours – Summer Day – 2032

Plan 30
Air Noise Map. Standby and Main Runway –
Leq Contours – Summer Night – 2032

Plan 31
Air Noise Map. Additional Runway –
Summer Day – 2040

FOREWORD

It is extraordinary to think that this year marks the 60th anniversary of the official opening of Gatwick Airport by Queen Elizabeth II.

Since then we have continued to be pioneers, driving green innovation and new standards of sustainability at the same time as becoming the world's busiest single runway airport and a critical piece of national infrastructure.

As Gatwick has been transformed in recent years, our global reach has grown with a long-haul network alone of over 60 routes. That has obviously helped drive economic growth for Britain, but at least as importantly growth for the region and the local communities we serve. Gatwick is now responsible for 1 in 10 jobs between London and Brighton, acts as a global gateway for the region's thriving visitor economy and helps many local businesses to trade overseas. It is no surprise that cargo volumes have increased significantly in the last couple of years as more and more people take advantage of the gateway to growth that Gatwick has become.

We are ambitious for Gatwick's future and we are also ambitious for the region and for Britain. As the UK heads towards a new chapter, we want to help provide more vital direct connections to global markets. Demand for air travel is expected to virtually double in just 30 years. With Gatwick now serving the largest aviation markets in the world, we want to be in the best position possible to help Britain seize this opportunity. And in doing so we want more local people to benefit from growth at the airport – with more jobs, skills and investment.

We are now at the point where we need to consider how best we respond to these challenges and opportunities alongside our airlines' increasing desire for more slots to take advantage of continuing market growth.

This draft master plan sets out our ambitions for the future. It explores how we might grow in the near term by deploying the latest technology to increase the capacity of our main runway – incrementally, sustainably and by becoming even more efficient.

As has been widely stated, we are not currently pursuing the option of a new runway to the south of the airport but we believe it is in the national interest to continue to safeguard the land for its potential future construction.

But we also recognise we need to be agile and look for new solutions to long standing challenges by making best use of our existing runways, in line with recent Government aviation policy statements.

So this draft master plan also sets out for the first time how the airport could meet future demand by potentially using our existing standby runway for departing flights only, alongside our main runway. We believe this development could be delivered by the mid-2020s, with relatively little disruption, Within our existing framework of airport charges and without increasing the noise footprint of the airport.

We recognise of course that some of our operations can and will impact the environment and some of our neighbours negatively. We will continue to do everything we can to limit and manage these impacts. Our ambition is to be the UK's most sustainable airport. We have a strong track record. Gatwick and the area around the airport meets legal air quality standards and will continue to do so as we grow. We became not only the first carbon neutral London airport, but also the first airport to achieve zero waste to landfill. The independent Noise Management Board at Gatwick brings the local community and aviation industry together in what is considered to be an industry-leading approach to managing aircraft noise at a local level. We will always make noise management a priority in our plans for the future.

Our local communities matter to us and we are proud of our active work to help support them – from the tens of thousands of children taking part in our Science, Technology, Engineering and Maths school programmes to the 50,000 people who have so far benefitted from our Gatwick Foundation Fund grants and hundreds of thousands who have attended events we sponsor promoting local health, wellbeing and diversity, including the Brighton Marathon and Brighton Pride. This work will continue to be a priority.

So in the year we mark and celebrate the past we now look ahead to the future. This draft master plan effectively marks the start of the next chapter for Gatwick – building on what has made the airport the success it is today, and pioneering again to take advantage of the exciting opportunities that lie ahead. We have only been able to reach this point through partnership and we now want to shape these plans together with our local communities, our passengers, partners and stakeholders. The decisions we take will be vital to the region's prosperity so we would encourage as many people as possible to contribute to helping us make them.

Stewart Wingate
Chief Executive Officer

EXECUTIVE SUMMARY

1. Gatwick has been transformed under new ownership since 2009. It has become a key element in the country's national infrastructure, an economic engine for local and regional growth and the airport of choice for millions of passengers. It contributes £5.3bn to the UK economy and supports over 85,000 jobs[1]. At peak times it is the busiest single-runway airport in the world and is ranked 12th in the world for the number of long-haul destinations served. Aviation will have an ever more important role to play in the next chapter for Britain and we are ambitious to do even more for the country at this critical time.

2. We recognise our responsibilities to those living near the airport. Gatwick supports thousands of jobs and is active in developing skills and opportunities in all parts of the local community. Equally the nature of the aviation industry inevitably means that those living closest to an airport will at times be impacted by its operations. At Gatwick we will continue to do everything we can to develop and grow sustainably, creating the right balance between economic growth and environmental impact.

3. The purpose of this draft master plan is two-fold. Firstly, a great deal has changed since the last master plan was published in 2012 and we wish to bring our wide range of stakeholders up to date with our present thinking on how we see Gatwick developing over the next 5 years. Secondly, in a situation where demand for air travel continues to outstrip capacity, we look ahead a further 10 years to 2032 and present three growth scenarios for the airport's longer term future:

1. One where it remains a single runway operation using the **existing main runway;**
2. one where the **existing standby runway** is routinely used together with the main runway, and;
3. one where we continue to **safeguard for an additional runway** to the south.

[1] *Oxford Economics: The economic impact of Gatwick Airport. 2017. Includes induced benefits.*

4. This draft master plan provides information on these scenarios, not only to help the reader understand how Gatwick might develop in terms of passenger numbers and physical infrastructure, but also to understand the potential environmental impacts and economic and employment benefits. A key priority for us is that the airport should develop in a sustainable manner. For this reason, the master plan sets out in some detail Gatwick's environmental strategies as well as our strategies in relation to employment and skills, as well as supporting local business and economic growth. Another important priority for us is delivering a high quality service for our customers, and the master plan explains some of the projects we plan to deliver which will ensure an efficient and resilient operation.

5 The Government recently published a policy document titled 'making best use of existing runways' which sets out its thinking on how airports should make best use of their existing runways whilst balancing their economic benefits and environmental impacts. The first two of our growth scenarios are consistent with this policy. This policy document forms part of the Government's work to develop a new Aviation Strategy. As details of this strategy emerge,we will monitor how it affects our draft master plan. The Government has recently finalised its Airports National Policy Statement supporting expansion at Heathrow. As a result we are not actively pursuing plans for an additional runway to the south.

6. Gatwick's single runway handled 45.7 million passengers in the year 2017/18. When the North Terminal was proposed in the late 1970s it was thought that the one runway/two terminal airport could accommodate around 25 million passengers per annum (mppa). Through a combination of greater use of the airport in the off-peak periods, more intensive use of the runway at the peak periods, and a shift to larger aircraft and higher load factors, airport capacity grew over time to today's level of just over 45mppa. We now believe that these same factors will enable the single runway airport to grow over the next 5 years to 53mppa. We set out later in this document how the airport's infrastructure may need to evolve to accommodate this level of throughput.

7. Demand for air travel is forecast to continue growing. The Department for Transport's most recent forecast of October 2017 shows demand for air travel in the UK rising from 267mppa in 2016 to 355mppa by 2030 and 495mppa by 2050. Capacity constraints (which are principally felt in the South East of England) would, however, limit throughput to well below these levels. We know that more airlines would use Gatwick if runway slots were available. Consequently, we have been considering how we could maximise Gatwick's ability to meet this growing demand in the medium and longer term, and the master plan outlines three growth scenarios. These scenarios are not exclusive choices; Gatwick could transition from one to another within the timeframes discussed in this draft master plan.

8. If the airport continues with the existing single runway operation we believe that by 2032 Gatwick could be processing up to 61mppa, although year on year growth rates will decline as the runway constraints become more binding. This level of throughput would be possible if, as expected, new air traffic management technologies allow some additional peak hour capacity to be released. Even so, most of the growth will be outside the current peak times and therefore the need for additional infrastructure will be relatively modest. With the introduction of quieter aircraft, we expect to see Gatwick's noise footprint continue to reduce despite the increase in aircraft movements.

9. A higher level of growth would be possible if we bring the existing standby runway into regular use (for departing flights only). The standby runway is currently used only when the main runway is temporarily closed. Our 1979 Section 52 Agreement[2] with West Sussex County Council precludes the simultaneous use of both runways. This agreement expires in 2019. By operating both runways simultaneously, we would be able to add between 10 and 15 additional hourly aircraft movements in the peak hours, which could deliver up to 70 million passengers by 2032. The airfield would need some reconfiguration and some additional support infrastructure would be required. However we expect to keep the airport development within the airport's existing footprint and the airport would remain a two terminal operation. Initial indications are that aircraft noise generated by this scheme would be broadly similar to today's level.

10. This scheme would make best use of our existing runways and provide Gatwick with a growth scenario which offers capacity and resilience benefits but without the scale of change required for the full additional runway scheme we submitted to the Airports Commission. It also aligns with Government's long established, and recently reiterated, policy of making best use of existing runways. It would provide the country with much needed additional runway capacity and would promote greater competition between airports, which has been proven to deliver benefits to the consumer.

[2] *1979 Agreement with West Sussex County Council not to build a second runway, or operate the standby runway simultaneously with the main runway.*

11. The Department for Transport's guidance on the preparation of airport master plans encourages airports to engage with their stakeholders at an early stage even if the full facts are not known. In accordance with this guidance, and in the light of the impending expiry of the Section 52 Agreement, we are bringing forward now our present thinking on how the existing standby runway could be used in the future, even though we have not completed all of our technical studies on this scheme. If we decide to take forward this scheme, it is likely that planning permission would need to be obtained through the Development Consent Order process - in which case, formal consultations would be undertaken based on a more complete understanding of the implications than is available at this stage. This consultation might take place during 2019. We believe that preparing for and completing this consent process would take up to five years and, allowing for the necessary construction activity, the standby runway could be brought into use alongside the main runway in the mid-2020s.

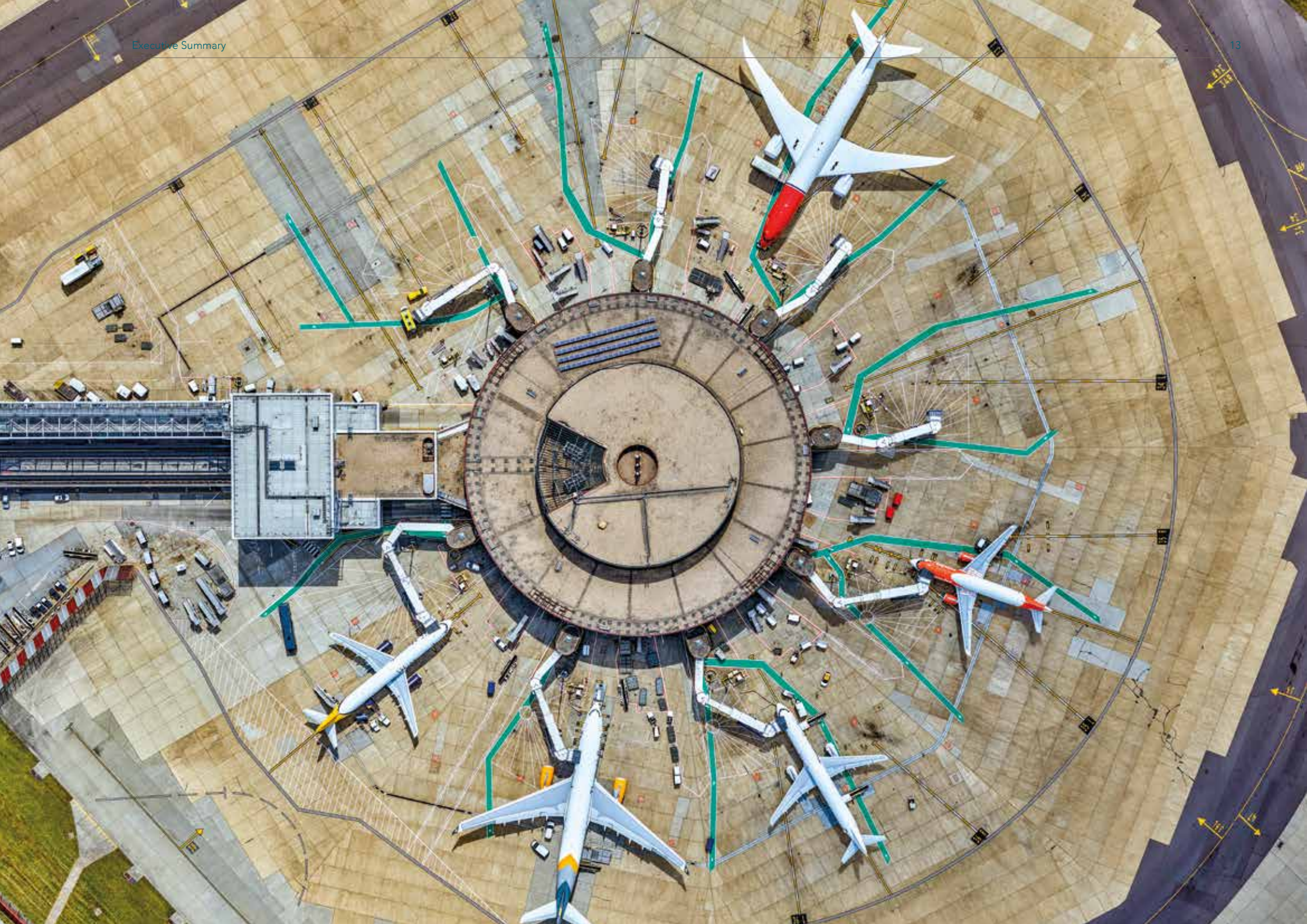
12. Although the Government's Airports National Policy Statement supports a third runway at Heathrow, we believe an additional Gatwick runway, built to the south, should continue to be safeguarded. We believe it is in the national interest to preserve this opportunity to build a new runway in the south east to meet longer term demand growth. DfTs forecasts show that by 2025 the main London airports, with the exception of Stansted, are expected to be effectively full and that, even with a third runway at Heathrow, UK airport capacity constraints will be apparent by 2030 and in subsequent years.

13. An additional runway could be delivered within approximately ten years of starting the planning process and would take Gatwick's capacity to approximately 95mppa. This is a much higher capacity scheme, requiring more significant changes to the airport and surrounding roads. While it would maximise the economic benefits Gatwick brings to the region, it would increase environmental impacts and, for that reason, our additional runway proposal submitted to the Airports Commission included both mitigation and compensation measures. Although, in view of Government support for expansion at Heathrow, we are not currently pursuing this scheme we believe it remains a credible means of providing longer term growth for the country, and it should therefore continue to be safeguarded

A SUSTAINABLE OPERATION

14. Regardless of the development scenario selected we remain committed to operating and developing Gatwick in a sustainable way. We will continue to use our Decade of Change sustainability strategy to drive efficiency improvements and reduce Gatwick's environmental footprint. This strategy has already delivered strong results and Gatwick has become the first London airport to hold Airport Carbon Accreditation at "Neutral" level (level 3+) and the first airport to hold Carbon Trust's Zero Waste to Landfill standard. We will continue to engage with stakeholders on issues such as noise management and air quality and we will continue our community support programme through sponsorship, grants, educational programmes and business development fora.

Gatwick is the first London airport to hold both AIRPORT CARBON ACCREDITATION at "Neutral" level (level 3+) and the Carbon Trust's Zero Waste to Landfill standard



1 INTRODUCTION

1.1 OUR VISION FOR GATWICK

1.1.1. Our overarching vision for Gatwick is for it to be the airport of the future and a model for sustainable growth. We can achieve this by being the UK's most innovative and progressive airport, meeting the needs of our customers – airlines and passengers, driving improved service standards and global connectivity, and delivering sustainable economic growth for the region and the UK. It is this vision which shapes the way we plan to develop the airport over the next 15 years and beyond.

OUR SIX STRATEGIC PRIORITIES

1.1.2 Our approach to operating the airport is guided by six priorities:

PASSENGERS
We want to be the airport of choice for all passengers and to provide a high-quality efficient service to them at all times

PARTNERS
We want to help all our airlines grow and succeed by developing strong commercial partnerships

PEOPLE
We want to invest in our people and to make sure that Gatwick is a great place to work

COMMUNITY
We want to be a good neighbour to the communities around the airport, supporting jobs and skills and limiting or, where possible, reducing negative impacts

SAFETY
We want to continue our relentless focus on zero incidents by promoting a strong health and safety culture throughout the airport

INNOVATION
We want to continue to innovate as 'the airport of the future', delivering efficiency and service through new technologies and process improvements

AIRPORT FOR BRITAIN

National infrastructure asset

1.1.3 Gatwick is already a key component of the UK's transport infrastructure and we want to maximise its future potential. In recent years Gatwick has seen unprecedented investment and growth and has benefited from serving a continually expanding range of destinations and airlines, maintaining its position as the second largest airport in the UK. In a post-Brexit Britain, we want Gatwick to continue its key role in strengthening global connections, trade, tourism, jobs and investment.

Global connectivity

1.1.4 Gatwick already serves over 45m passengers per year and is the 7th busiest airport in Europe, with the 12th largest long-haul network. Our airlines fly to over 200 destinations including over 60 long-haul routes with, for example, over 300 flights a week to North America alone. Mirroring this growth in long-haul passenger flights, cargo volumes are growing rapidly – up 24% in the last year. Our aim is to build on this success, growing our route network further and opening up new travel and business opportunities.

Ability to serve all aviation markets

1.1.5 A particular strength we want to capitalise on is Gatwick's ability to accommodate and support the full range of airline business models. We have a long history of hosting airlines which offer full-service and charter services, and recent years have seen remarkable growth in low-cost operators on long-haul, short-haul and domestic routes. This growth by low-cost airlines stems from our relatively low landing charges, a focus on operational efficiency, a willingness to innovate, and easy access to destinations in London and the South East. The recent strong growth in long-haul services has also increased the number of inbound overseas visitors travelling to the UK for both business and leisure purposes.

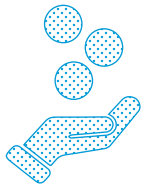
Enabler of economic growth

1.1.6 We want to maximise Gatwick's potential as an enabler of economic growth. The airport already contributes £5.3bn to the UK's GDP and supports 85,000 jobs in the UK, of which around 24,000 are located at the airport itself. By facilitating the continued growth of the airport, we can help generate higher levels of economic benefits and more job opportunities.

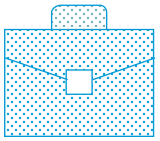
Ground transport connectivity

1.1.7 We want to build on Gatwick's already strong surface transport links. Our rail station has daily, direct connections to over 120 other stations, which we believe is more than any other European airport station. Significant improvements are underway on the road and rail network, and a radically improved station will shortly be under construction. This will help us increase the already high proportion of our passengers and staff who use sustainable transport modes to access the airport.

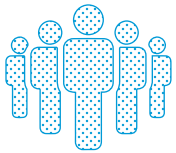
GATWICK



CONTRIBUTES
£5.3bn
TO THE UK'S GDP



SUPPORTS
85,000
JOBS IN THE UK



24,000
PEOPLE EMPLOYED AT THE AIRPORT ITSELF

AIRPORT FOR THE FUTURE

Aviation trends

1.1.8 We are well placed to capitalise on the changes that are taking place within the aviation industry, such as the introduction of more efficient and quieter aircraft, the growth in low-cost long-haul services, and the availability of new technologies to streamline processes, deliver greater efficiency and improve customer service.

New routes

1.1.9 New, longer range and more fuel-efficient aircraft types are entering service and these are opening up opportunities for new direct air services. Allied to the rapidly increasing demand for air travel from emerging global markets, this is generating a growing demand for air travel to and from the UK.

New technology

1.1.10 We will continue to focus on innovative use of new technologies and processes. This focus has already allowed us to outstrip all previous expectations on the amount of capacity and the quality of service that can be provided at the airport.

1.1.11 We will continue our investment in new technologies designed to improve the passenger experience, for example reducing the time spent at check-in and security. We are already exploring the use of machine-assisted technology (for example in car parks), augmented reality technology to assist wayfinding, and the use of electric and driverless vehicle technology. These new technologies and processes will enable Gatwick's infrastructure to process more passengers whilst maintaining or improving service standards.

Efficient and Resilient operations

1.1.12 We will work collaboratively with our industry partners to ensure that best use can be made of our existing main and standby runways. This work is not limited to seeking additional capacity but importantly focuses on how the operation can be made more efficient, more resilient and more punctual. We will seek ways to reduce delays to aircraft operations through the development and application of the latest processes and technology. This will not only bring commercial and passenger service benefits but will also reduce carbon emissions.

Sustainability

1.1.13 Technology and process improvements can help reduce our environmental impacts. We were the first airport in London to be given a 'Level 3+ Neutral' certificate by Airport Carbon Accreditation. We use 100% certified renewable energy to run the airport and have built a world-leading waste-processing plant. By driving energy efficiency we will continue to reduce costs and limit our carbon emissions. It will also assist us to ensure that the airport's air quality continues to meet legal standards.

1.1.14 We will continue supporting our Noise Management Board and engaging with local communities to identify and implement noise reduction and mitigation strategies. We will also seek outcomes from the planned modernisation of the South East airspace which will help to reduce engine emissions and noise impacts.

AIRPORT FOR EVERYONE

Meeting the needs of all passengers

1.1.15 We want to maintain our unique position as the airport that caters for all airline types and all categories of passengers – from business travellers to families going on holiday. We will continue to consult these different types of passengers to identify their specific requirements and expectations so that we deliver the future airport which best serves their needs.

Accessibility

1.1.16 We will continue to strive for accessible air travel for all passengers. For example we have been focusing on delivering improved services for passengers with accessibility issues, an area where we acknowledge more attention is required. This includes the introduction of lanyards for those with hidden disability, the appointment of autism champions, and investing in new facilities for passengers who need special assistance.

Innovative service offers

1.1.17 We will continue to explore ways of improving services in a world where passenger expectations and requirements are constantly evolving. We will exploit IT developments to provide customers with new ways of accessing real-time information about their journey, for example through our innovative passenger app. We will also continue to develop new and exciting retail and catering offers so that passengers' spare time at the airport can be as enjoyable as possible.

AIRPORT FOR THE COMMUNITY

Economic and employment benefits

1.1.18 We want to maximise the positive contribution Gatwick makes to local communities through employment opportunities and through our supply chain. We are developing new ways of raising local awareness of job vacancies at the airport and provide help to local unemployed people through our employability programme. We will focus on improving opportunities for local business to supply goods and services to Gatwick. We are sponsoring partners for the Gatwick Diamond 'Meet the Buyers' event, and will continue to work actively with regional partners to create new business opportunities for local companies.

Education

1.1.19 We will continue to promote Science, Technology, Engineering and Maths (STEM) subjects amongst local school children, for example 'Crawley STEMfest' and the 'Big Bang South East'. Our exciting new programme, Learn Live, broadcasts Gatwick Airport live into classrooms across the country, showcasing key airport themes and careers

Managing and mitigating impacts

1.1.20 We aim to do everything we reasonably can to deliver a sustainable operation. As Gatwick's growth continues, we will remain sensitive to the impacts our operation has on local people. We have a wide range of engagement forums in place. In 2016 we set up a Noise Management Board, through which we will continue to work with industry and community representation to seek practical ways of reducing noise impacts. We will continue to provide grants for sound insulation to those most affected by noise. We will continue to implement schemes designed to improve air quality and will ensure that all air quality standards continue to be met.

Local community support

1.1.21 We want to continue our role in assisting local good causes through sponsorship and direct grants. We launched the Gatwick Foundation Fund in 2016, working in partnership with the Community Foundations in Kent, Surrey and Sussex to oversee £300,000 of annual grants for good causes across the region.


LONDON AIRP

1.2 THIS MASTER PLAN

1.2.1 Gatwick's last master plan was published in July 2012. Since then there have been significant changes within the industry. The Government has decided to support a third runway at Heathrow and is in the process of developing a new Aviation Strategy. It is best practice to provide regular updates about how Gatwick might develop, and we believe that now is the right time to set out our current thinking.

1.2.2 Our 2012 Master Plan was published at a time when the UK aviation industry was recovering from a major, worldwide recession. Passenger numbers at Gatwick had still not returned to their pre-recession levels, and our focus was on making much-needed improvements to the existing airport, following its sale by BAA in 2009. The Coalition Government had cancelled plans for expanding Heathrow and our forecasts predicted that the milestone of 40 million passengers per annum (mppa) at Gatwick would be reached in 2021.

1.2.3 Since the publication of our 2012 Master Plan there have been significant changes. We have seen unprecedented levels of growth in demand at Gatwick which have been accommodated through the application of industry-leading technology and processes, along with significant development projects. We have seen major changes in the industry including the introduction of new generation long-haul aircraft such as the B787 and A350, and the introduction of low-cost long-haul services. We have also seen a much greater level of engagement with our local communities on issues such as the management of aircraft noise and increased support for educational and training programmes.

1.2.4 The current airport operation and infrastructure is described in **Chapter 2.**

GATWICK'S ROLE IN FACILITATING FUTURE GROWTH

1.2.5 Following the work of the Airports Commission the Government has given policy support for a third runway at Heathrow. However the process of obtaining planning consent is such that it will be many years before the third runway can be brought into use. In the meantime the Government is developing a new Aviation Strategy which should be completed in the first half of 2019.

1.2.6 The Government's forecasts show that demand for air travel will continue to rise and is likely to be capacity constrained. London City, Stansted and Luton airports all have plans to grow to help meet this growth in demand - but there will still be a gap.

1.2.7 Changes in the aviation market and the latest developments in the Government's aviation strategy are explored in **Chapter 3**.

1.2.8 This draft master plan shows how Gatwick can respond to these changes and grow over the next fifteen years, in order to deliver economic benefits for the region and the UK, particularly by making best use of its existing infrastructure. There are three broad ways that – used either separately or in combination – might enable Gatwick to grow to meet increasing demand for air travel:

- **Growing by making the best use of the existing main runway** If Gatwick remains a single runway airport then we are committed to extracting the maximum value from the existing infrastructure, whilst delivering a sustainable and resilient operation.
- **Growing by bringing the existing standby runway into regular use alongside the main runway.** This is an opportunity which we are still exploring but, based on current findings, it is one which we may choose to progress in the near future.
- **Growing by building an additional new runway to the south of the existing airport.** We are not currently progressing this scheme but believe it is one which is in the national interest to continue to safeguard for the future.

THE SINGLE MAIN RUNWAY AIRPORT

1.2.9 Gatwick has grown much faster than anyone predicted when the 2012 Master Plan was published. We are now handling over 45 million passengers per annum, which was previously considered to be the ultimate capacity limit of the single main runway airport. Despite this, traffic is still growing and we believe it can continue to do so.

1.2.10 Using one main runway, Gatwick is already capable of accommodating significantly more flights and passengers than was previously thought possible. In the late 1970s, when North Terminal was being planned, the maximum airport capacity was thought to be 25 mppa. Since 2000, estimates have suggested 40-45 million passengers to be the maximum potential. This draft master plan shows that Gatwick's capacity with one main runway is now expected to be up to 61 mppa by 2032.

1.2.11 The development of Gatwick with one main runway is explored in the short term (5 years) in **Chapter 4**, and in the longer term (10-15 years) in **Chapter 5.**

THE STANDBY RUNWAY SCENARIO

1.2.12 In view of the eventual constraints of the existing single runway and the clear evidence of increasing demand for air travel, we have examined ways to further increase the capacity potential of Gatwick as well as improving its operational efficiency and resilience.

1.2.13 In this work we have explored the possible use of our existing standby runway simultaneously with our existing main runway – although for departing flights only. The standby runway (also known as the emergency runway or northern runway) was granted planning permission in 1979. It provides an alternative runway for use when the main runway is closed as a result of planned maintenance or an incident. The standby runway was created by widening an existing taxiway.

1.2.14 Owing to the close proximity of the two runways, the capacity gain would be appreciably smaller than under the full additional runway scheme submitted to the Airports Commission. Nevertheless it would support more growth than the single main runway could sustain on its own, adding around 10-15 additional movements in the peak hours, which could deliver up to 70 million passengers by 2032. This strategy aligns with the Government's support for making best use of existing runways as confirmed in its 2018 policy document 'The future of UK aviation: making best use of existing runways'.

1.2.15 **Chapter 5** provides more information on the standby runway scenario and how it might be delivered.

SAFEGUARDING FOR AN ADDITIONAL NEW RUNWAY TO THE SOUTH

1.2.16 In our submissions to Government in connection with its review of runway capacity in the UK, we demonstrated that an additional independent runway at Gatwick would be a viable and credible project. However, we acknowledge that Government has instead chosen to support the provision of a third runway at Heathrow.

1.2.17 The DfT's October 2017 forecasts show that demand for air travel will continue to exceed supply both before and after a third runway is provided at Heathrow. It is therefore likely that a further, additional new runway will be required in the south-east at some point. The new Aviation Strategy will provide a framework for growth beyond 2030, by which time the DfT's forecasts show Heathrow will be full, even with a third runway. For this reason, it is prudent – and in the national interest - to continue to safeguard land at Gatwick for an independent full length southern runway.

1.2.18 Previously we have referred to our scheme submitted to the Airports Commission as the 'second runway' scheme (sometimes shortened to 'R2'). However in this draft master plan we refer to this scheme as the 'additional runway' to avoid confusion with the standby runway scheme described above.

1.2.19 Details of the safeguarded additional runway scheme can also be found in **Chapter 5.**

A SUSTAINABLE OPERATION

1.2.20 One of our key objectives is for Gatwick to be the UK's most sustainable airport, managing our environmental impacts in line with Government policies, and maximising the economic and social benefits that Gatwick's operation can support.

1.2.21 This draft master plan provides more information on our sustainability strategies and community engagement in **Chapters 6, 7 and 8.**

2 GATWICK TODAY

2.1 INTRODUCTION

2.1.1. In 2009 the Competition Commission concluded its market investigation into the BAA group, which then included Gatwick Airport. It found evidence of substantial competition problems and required Gatwick and two other airports to be sold. Gatwick was sold by BAA in December 2009 to Global Infrastructure Partners (GIP). The airport company (Gatwick Airport Limited) is currently owned by a group of global investment funds, with GIP holding the largest stake.

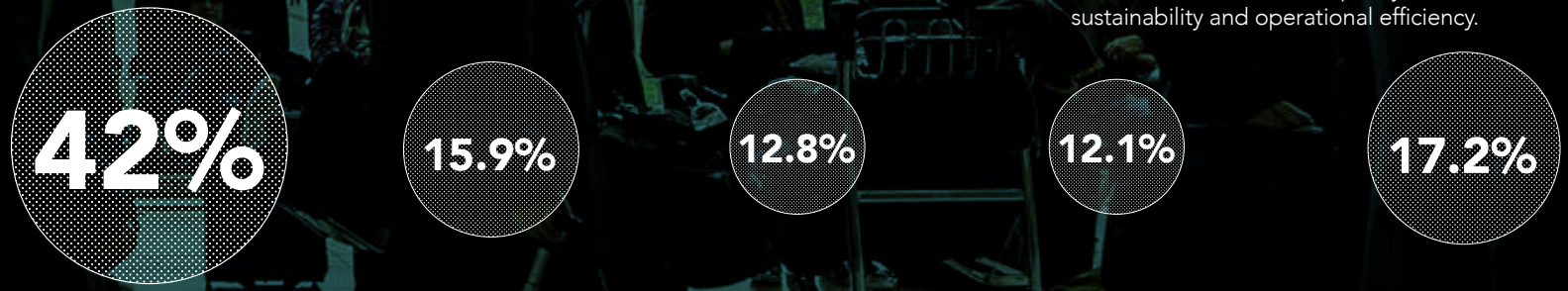
2.1.2. Since the change in ownership in 2009, Gatwick's passenger throughput has grown by nearly 40%. New low-cost long-haul routes have been introduced and the airport has benefited from £1.5 billion of investments. These have transformed the infrastructure and the services we offer to our airlines and passengers.

2.1.3. In 2016 the Competition and Markets Authority (CMA) reviewed the outcomes of the break-up of BAA. The CMA found strong evidence of the benefits of separate airport ownership, particularly at Gatwick. Examples provided include better service quality, with innovative improvements to passenger services, more productive relationships with the airlines, more efficient capital investment, and greater efforts to attract new airlines and routes which have delivered strong traffic growth.

2.1.4. The shareholder board, chaired by Sir David Higgins and supported by the executive management team led by CEO Stewart Wingate, is committed to making Gatwick an even more successful international airport and London's Airport of Choice.

2.1.5. This chapter of our draft master plan provides information on our current air traffic, our passengers, airlines, aircraft and routes. It also describes the current airport infrastructure and identifies recent improvements that have been made to enhance capacity, service, sustainability and operational efficiency.

THE SHAREHOLDERS ARE:



GLOBAL INFRASTRUCTURE PARTNERS

THE ABU DHABI INVESTMENT AUTHORITY

THE CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

KOREAN NATIONAL PENSION SERVICE

FUTURE FUND OF AUSTRALIA

2.2 TRAFFIC CHARACTERISTICS

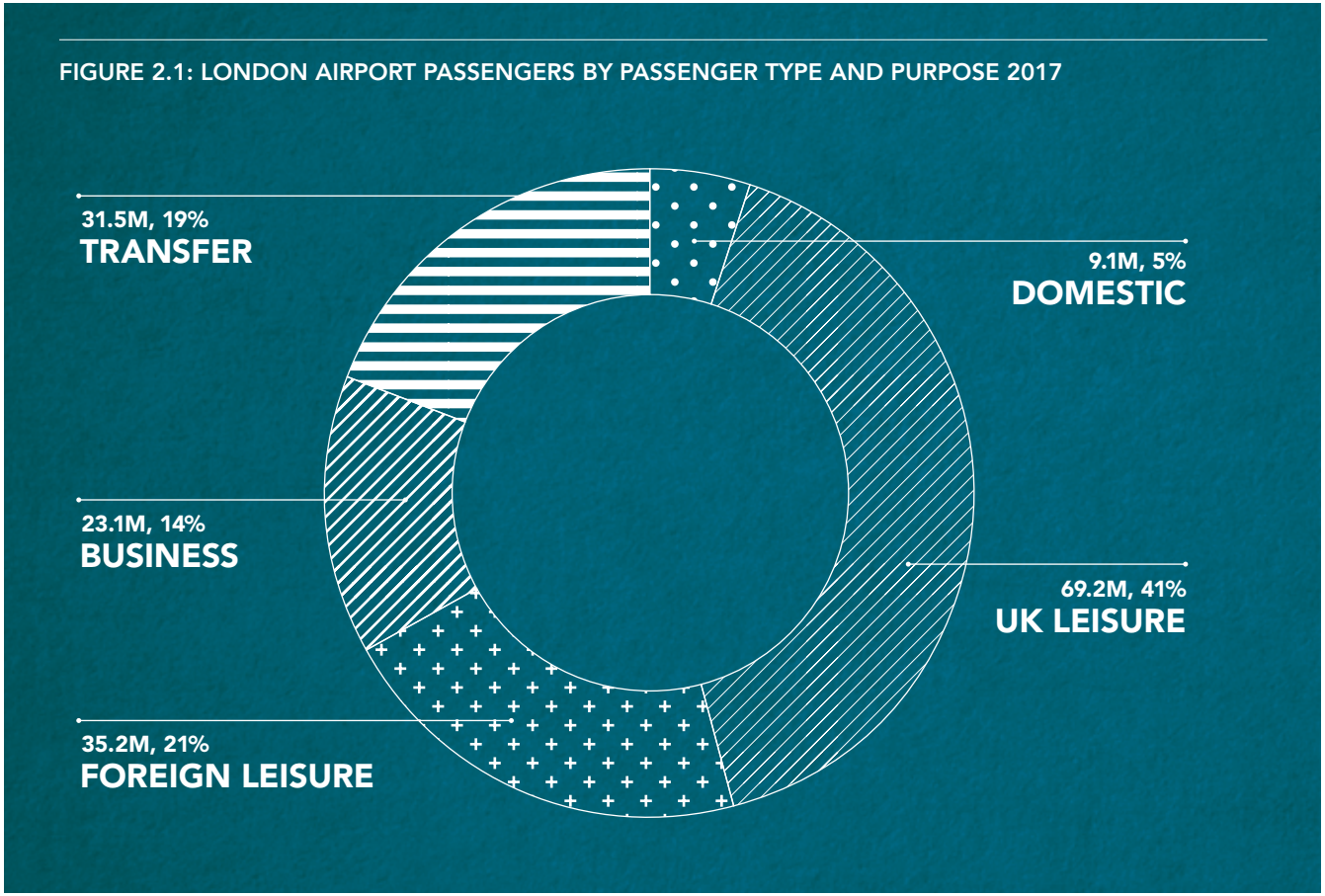
2.2.1 The following section describes the nature of Gatwick's current air traffic; the passengers, airlines, routes and aircraft. For a commentary on potential future traffic growth see sections 3.2, 4.2, 5.2, 5.3 and 5.4.

THE LONDON MARKET

2.2.2 London is the biggest aviation market in the world in terms of passenger numbers. In 2017/18 the five main London airports handled 171m passengers. This is more than New York, Tokyo, and Shanghai, the next three largest markets, and in large part this stems from the size of London itself. The capital is home to more than 8.9m people with another 8.8m living in the surrounding South East of England. The prediction is that London's population will grow by a further 800,000 over the next 10 years. More than a quarter of London's air passengers chose to use Gatwick Airport in 2017/18.

2.2.3 During 2017 (calendar year) 69m UK-based, and 35m overseas-based, passengers used London's airports for international leisure purposes. This is due to the city's large and prosperous catchment as well as its status as a global tourist attraction. In the same year 23m international business passengers (of which approximately half were foreign visitors) passed through London's airports, reflecting the capital's status as a major business services and financial hub. A further 9m domestic passengers used London's airports in 2017. The balance, 31m, were passengers using London's airports solely to connect between flights, rather than beginning or ending their journey in the capital.

FIGURE 2.1: LONDON AIRPORT PASSENGERS BY PASSENGER TYPE AND PURPOSE 2017



GATWICK'S PASSENGERS

2.2.4 In the two years following the global financial crisis in 2008, UK airport passenger volumes fell by almost 15%. Since then UK airport traffic has recovered steadily, surpassing the pre-recession peak in 2015/16. Assisted by our strategies to develop and grow the business Gatwick has fared better than most UK airports, recovering to its pre-recession peak by 2013/14. Many regional airports have yet to recover to pre-recession levels.

2.2.5 Since our last master plan was published in 2012, Gatwick has added almost 12m passengers in just 6 years, adding more than any other UK airport. This is also a much higher level of growth than we predicted in the previous master plan, and much higher than the Airports Commission predicted.

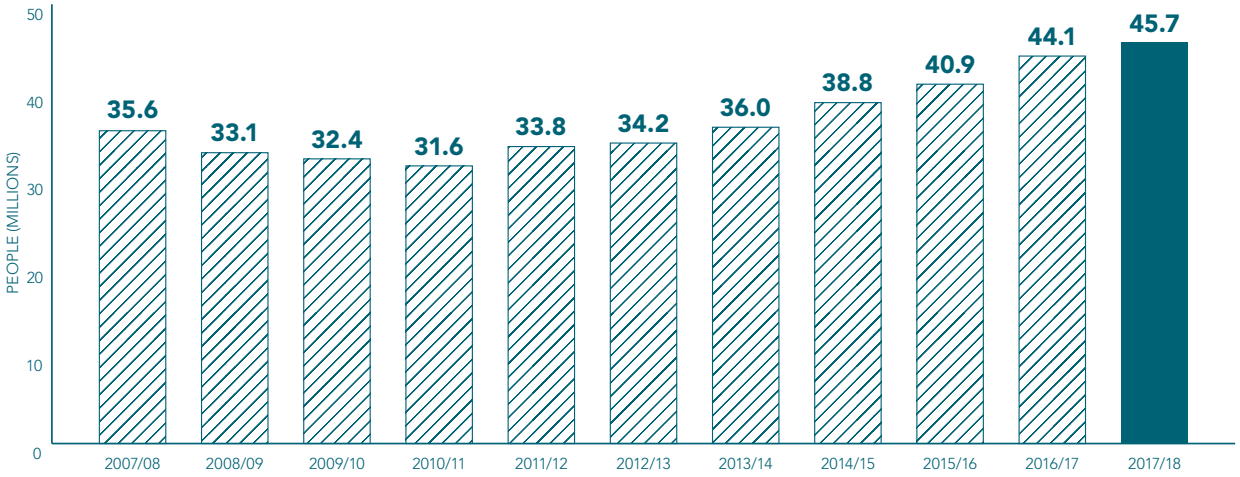
2.2.6 Department for Transport (DfT) forecasts have also underestimated Gatwick's growth in traffic. In 2013 the DfT forecast that Gatwick would accommodate 34m passengers in 2017, over 10m fewer than were actually handled in that year. The DfT's 2017 forecast update continues to underestimate passenger demand at Gatwick, projecting 45m passengers by 2030 in their central case although we have already exceeded this volume in 2017/18.

2.2.7 The increasing demand for air travel has provided the platform for growth at Gatwick and this is explored further in Sections 3.1 and 3.2. There are three main ways in which this growing demand has been converted into higher levels of traffic throughput:

(a) More passengers per flight

2.2.8 Average passengers per aircraft movement have grown from 140 in 2011/12 to 163 in 2017/18. 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.

FIGURE 2.2: GATWICK AIRPORT PASSENGERS (M)



SOURCE: GATWICK AIRPORT

(b) Peak spreading

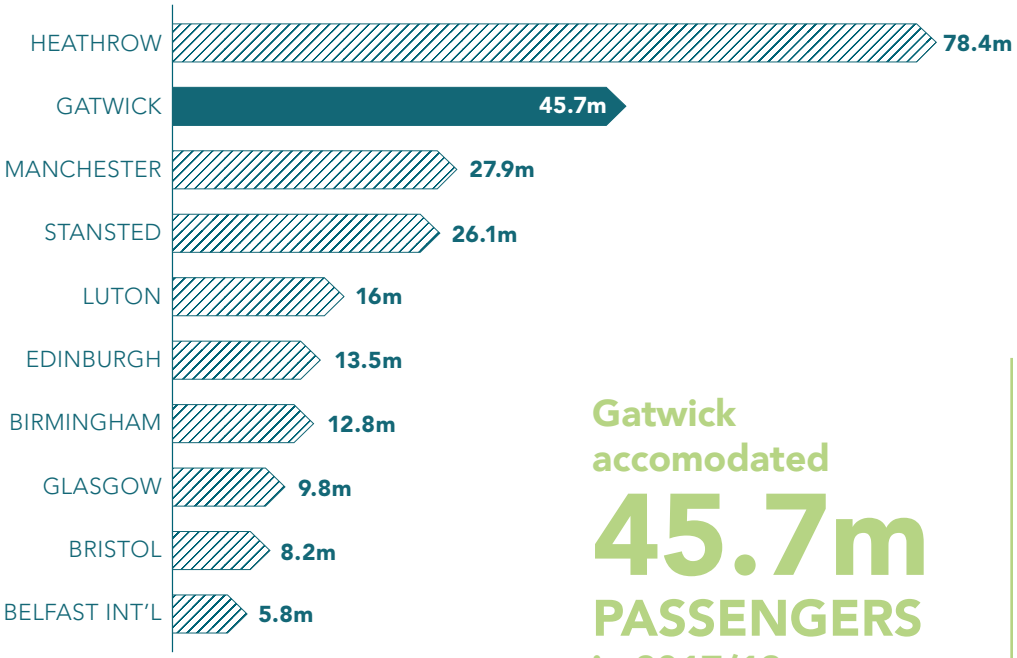
2.2.9 There has been a change in the profile of flights across the year, with a higher level of growth in the traditionally quieter periods of the year. This 'peak spreading' makes use of spare capacity on the runway and leads to a higher level of annual utilisation of the existing assets on the airport.Gatwick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

(c) Growth in peak runway capacity

2.2.10 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 today. This increase has allowed more flights, including during the busy summer period.

2.2.11 This traffic growth represents a compound annual growth rate (CAGR) of 5.2% p.a. compared to the UK average of 4.1% between 2011/12 and 2017/18. In 2017/18 Gatwick reached 45.7m passengers and remains the second largest airport in the UK by passenger volume.

FIGURE 2.3: UK AIRPORT PASSENGERS (M), 2017/18



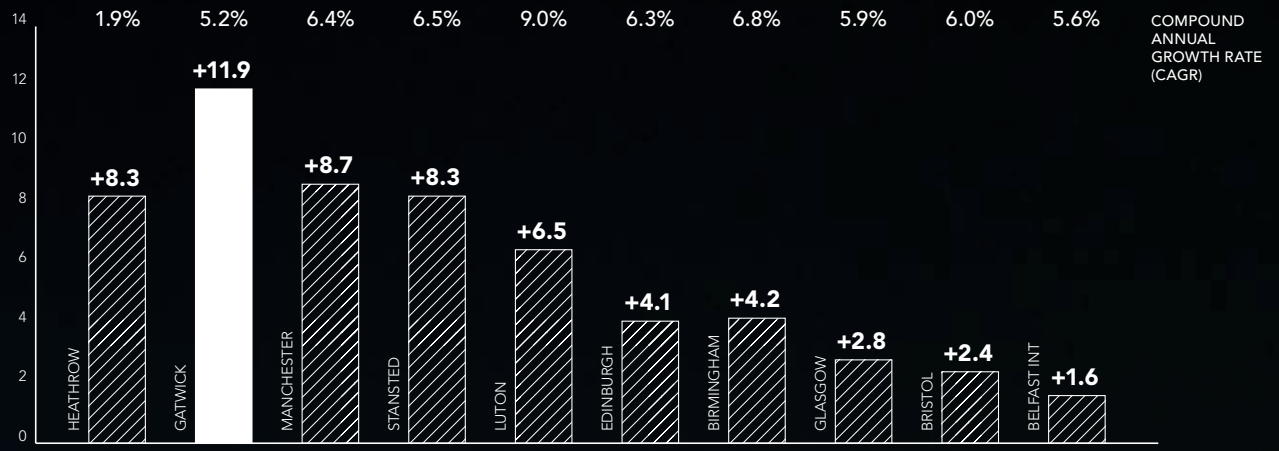
Gatwick accomodated **45.7m PASSENGERS** in 2017/18

12M ADDITIONAL PASSENGERS SINCE 2012

Remains the second **LARGEST AIRPORT IN THE UK BY PASSENGER VOLUME**

SOURCE: CAA AIRPORT STATISTICS

FIGURE 2.4: AIRPORT PASSENGER GROWTH BETWEEN 2011/12 AND 2017/18



SOURCE: CAA AIRPORT STATISTICS (FY = FINANCIAL YEAR ENDING MARCH, CAGR = COMPOUND ANNUAL GROWTH RATE. TOP 10 UK AIRPORTS CHOSEN BASED ON PASSENGER RANKING IN 2017/18)

2.2.12 Gatwick's proximity to London and extensive surface access links to the wider South East (and beyond) give us a wide catchment area. 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 nearby counties Kent, Surrey and Sussex account for a further 27%. Of the 19% of passengers travelling to/from destinations outside the South East, the majority were travelling to/from the East or South West of England (See Figure 2.5).

27%

Gatwick passengers travel to/from Kent, Surrey and Sussex

FIGURE 2.5: UK ORIGIN/DESTINATION OF GATWICK'S PASSENGERS

REGION	SUB-REGION	% OF GATWICK TERMINATING PASSENGERS
South East	Greater London	42.2%
	Kent	7.4%
	West Sussex	6.7%
	Surrey	6.7%
	East Sussex	6.3%
	Hampshire & Isle of Wight	6.0%
	Berkshire	2.7%
	Oxfordshire	1.9%
	Buckinghamshire	1.2%
East of England		7.5%
South West		5.4%
West Midlands		1.5%
East Midlands		1.5%
Wales		1.1%
Yorkshire and the Humber		0.8%
North West		0.4%
Scotland		0.3%
North East		0.3%
Northern Ireland & Isles		0.1%

SOURCE: CAA SURVEY, 2017

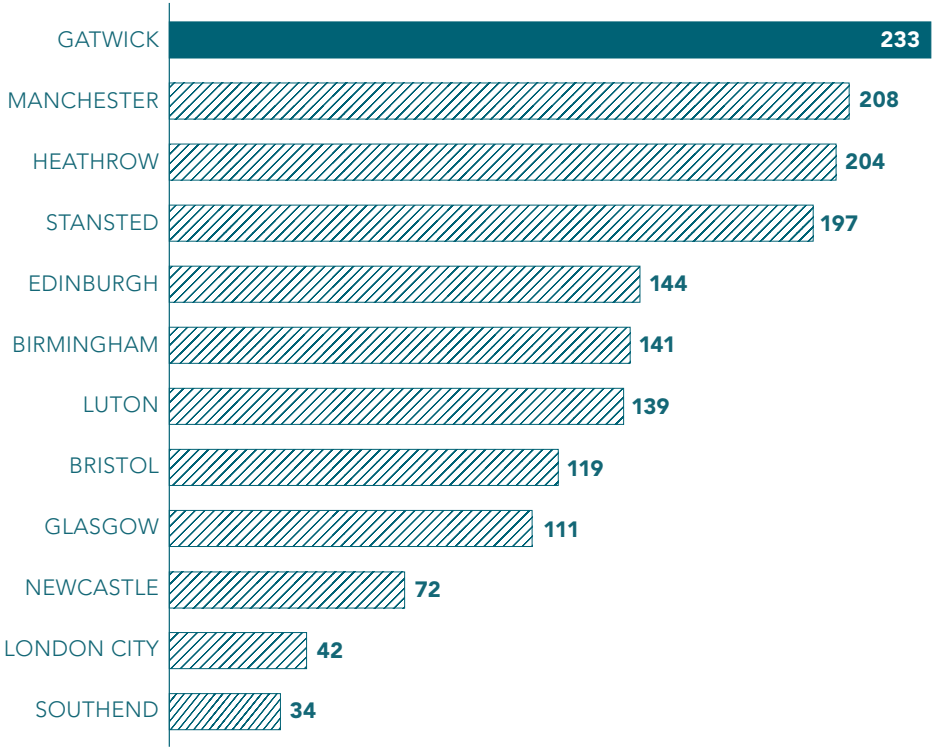
AIRLINES AND DESTINATIONS

2.2.13 Gatwick currently serves 233 destinations, more than any other airport in the UK, across long-haul, short-haul and domestic routes. Figure 2.6 compares UK airports in terms of the number of destinations served in 2017/18. **Plan 1** shows the location of the destinations served from Gatwick at the time of publication.

2.2.14 Gatwick is unique amongst London's airports as it accommodates significant numbers of low-cost, full-service, charter and regional airlines. This broad range of carriers helps support a large route network. Gatwick is the largest base for easyJet, who accounted for 18.5m passengers in 2017/18. However we are also home to a wide range of other airlines reflecting the diverse markets and passenger types using Gatwick.

2.2.15 Sadly Monarch, which was Gatwick's 8th largest airline, entered administration on 2nd October 2017. Prior to the administrators winning the right to sell the airline's slot portfolio, airlines submitted requests amounting to 6 times the available slot portfolio, confirming the significant demand that exists for Gatwick slots.

FIGURE 2.6: NUMBER OF DESTINATIONS SERVED BY UK AIRPORTS



SOURCE: OAG (ANALYSIS OF WINTER 2017 AND SUMMER 2018 SCHEDULES. DESTINATIONS SERVED BY FLIGHTS WITH TOTAL OUTBOUND SEAT CAPACITY OF AT LEAST 2,000)

2.2.16 Traffic through the London airport system is dominated by short-haul international passengers and Gatwick shows the same trend with short-haul routes accounting for 72% of passengers.

2.2.17 Gatwick also has a significant, and growing, share of long-haul traffic. Long-haul markets account for 17% of passengers at Gatwick with 7.6m long-haul passengers using the airport in 2017/18. Gatwick's long-haul market had traditionally been built around a solid core of primarily leisure routes to the US and the Caribbean. However, this has been changing in recent years. We have witnessed the rapid expansion of long-haul operation with new services to New York, Boston, Los Angeles, Buenos Aires, Seattle and Taipei. There are also new long-haul routes from Cathay Pacific, WestJet, Air Canada, China Airlines, Air China, Norwegian and British Airways. Gatwick now serves over 60 long-haul destinations and further routes are planned.

2.2.18 The pace of long-haul growth has increased in recent years, delivering 1.2m additional passengers in 2016/17 and 1m in 2017/18. In 2017/18, long-haul accounted for 60% of Gatwick's traffic growth. 2018/19 will deliver even greater growth following the launch of large number of new long-haul services in late 2017 and early 2018. Long-haul growth is expected to exceed 1.4m passengers in 2018/19.

2.2.19 We have also seen some growth in the UK domestic market, with 4m passengers in 2017/18 representing 9% of our total.

AIRCRAFT

2.2.20 Gatwick handled over 282,000 aircraft movements across 2017/18. Almost 87% of these movements were carried out by narrow-body jets, which reflects the dominance of short-haul markets. Wide-body jets made up 12% of movements, while smaller regional jets and turboprops accounted for the remainder.

2.2.21 The vast majority of flights at Gatwick are by scheduled and charter passenger air transport movements (PATMs), making up 98.5% of the total. Positioning flights and general aviation flights account for the majority of the remainder (1.4% combined). A few other flights consist of air taxis, training flights and other non-commercial movements.

2.2.22 We play host to many of the newest aircraft types in the industry, with low-cost carriers typically maintaining a young fleet. Norwegian, Qatar and TUI operate the Boeing 787 Dreamliner from Gatwick, and this is now the second most frequently used wide-body jet operating from the airport. Cathay Pacific's Hong Kong service uses the new Airbus A350, the first scheduled A350 service to the UK, and China Airlines launched A350 services from Taipei to Gatwick in December 2017. EasyJet has started introducing the new A321 Neo into its Gatwick fleet with more seating capacity and more fuel-efficient and quieter engines.

2.2.23 One of the major changes we have seen since the last master plan is the introduction by Emirates of the A380 aircraft to Gatwick with 3 rotations per day by these aircraft, the largest types in service.

CARGO

2.2.24 In 2017/18 Gatwick handled just over 102,000 Tonnes of Cargo – a 24% increase on the previous year, driven by the additional long-haul services. A recent study by Oxford Economics[3] showed that almost two-thirds of freight (63 percent) is outbound (i.e. exported). Oxford Economics estimated that in 2017 this cargo amounted to some £5.3 billion worth of exports, supporting a £4.2 billion contribution to GDP, along with 61,900 jobs.

2.2.25 Route-level analysis reveals that, in terms of cargo volumes carried, long-haul routes at Gatwick perform at a level similar to comparable routes at London Heathrow. With the resurgence in long-haul services currently being experienced, we are already seeing cargo volumes responding proportionately.

[3] *Oxford Economics: Gatwick's economic contribution through trade and investment. June 2018.*

FIGURE 2.7: GATWICK'S LARGEST AIRLINES BY PASSENGERS FLOWN IN 2017/18

2.3 GATWICK'S INFRASTRUCTURE

2.3.1 Gatwick Airport has been evolving continuously since South Terminal first opened in 1958. Although the airport has changed out of all recognition, we still retain the original design philosophy of providing a simple-to-use integrated transport hub, with easy connections between air, road and rail networks.

2.3.2 Gatwick's location relative to local towns, transport links and other features is illustrated in **Plans 2, 3 and 4**. The airport is located between the towns of Horley to the north and Crawley to the south. The London to Brighton railway line and the A23 are adjacent to South Terminal, and the M23 motorway runs north to south to the east of the airport. The River Mole and Crawters Brook flow from south to north, passing beneath the runway in a culvert. Gatwick Stream flows alongside the railway line, joining the River Mole to the north of the airport.

THE AIRPORT BOUNDARY

2.3.3 The airport boundary illustrated in **Plan 4** is defined by the land which is owned by Gatwick Airport Limited (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) which are used for airport-related purposes. These additional land parcels are either surrounded by GAL-owned land (for example the cargo sheds) or are positioned immediately adjacent to GAL-owned land.

2.3.4 This boundary differs slightly to that shown in the 2012 Master Plan which included some land on the perimeter of the airport which is not GAL-owned and is not used for airport related purposes and excluded some land on the airport perimeter which is used for airport related purposes.

2.3.5 The differences between the boundary in this draft master plan and the 2012 version are:

- The Tinsley House Immigration Centre in Lowfield Heath has been removed. This is not GAL-controlled land.
- An area of airport car parking positioned on the south-west corner of the airport is now included.
- On the north-east boundary, Schlumberger House has been excluded as this is not GAL-controlled land.
- On the north-west corner of the airport, we have included 7.4ha of land which we have agreed to purchase from the Gatwick Aviation Museum. We are considering options for this land which include additional surface water drainage infrastructure, relocated natural habitats and the general enhancement of our green spaces.

2.3.6 We recommend that the airport boundary represented in **Plan 4** is adopted by other organisations wanting to illustrate the perimeter of the airport.

2.3.7 **Plan 5** identifies some of the key features of the airport, for example some of the principal buildings and other elements of major infrastructure.

2.3.8 The total area of the airport defined by the boundary shown in **Plan 6** is 760ha. This is 1ha more than the area of 759ha quoted in the 2012 Master Plan owing to the boundary changes outlined above. **Plan 6** also shows how the existing airport can be sub-divided into the eight land use categories described below.

AIRFIELD FACILITIES

2.3.9 Gatwick's airfield extends over an area of 230ha. This is approaching one third of the total land within the airport boundary. The airfield comprises the Airport's primary and standby runways, the northern parallel taxiway (Juliet Taxiway), navigational and landing aids, the Airport's fire training ground and the extensive grass areas surrounding these facilities.

2.3.10 The primary runway is an instrument runway (suitable for operations in low visibility conditions) with a pavement length of 3,316m. It is designated 08R/26L. This means that when the wind is from the East, aircraft using the runway operate on a heading of 080°, and when the wind is from the West 260°. Due to prevailing wind conditions, the runway is used in the Westerly (260°) direction for approximately 75% of the time in a typical year. However this does vary by year.

2.3.11 The parallel standby runway (designated 08L/26R) is currently used only when the primary runway is unavailable due to planned maintenance or an unplanned closure. 08L/26R is a visual runway (it cannot be used in low visibility conditions) with a pavement length of 2,565m. In 2017 there were 3,722 movements on the standby runway which equates to 1.3% of total runway movements for the year.

PASSENGER TERMINALS

2.3.12 Gatwick has two passenger terminals, North Terminal which opened in 1988, and South Terminal which opened in 1958. Along with their associated facilities the terminals occupy approximately 18ha of airport land. North and South Terminals have gross floor areas of approximately 98,000m² and 119,000m² respectively. This quoted floor area for South Terminal is lower than the figure used in the 2012 Master Plan (160,000m²). This is because the floor areas have been re-measured to ensure consistency of treatment between both terminals. For example the larger area for South Terminal quoted in the 2012 Master Plan included various ancillary spaces and some adjacent buildings and other structures.

FIGURE 2.8: TERMINAL FACILITIES

	SOUTH TERMINAL	NORTH TERMINAL	TOTAL
Terminal size (m²)	119,278	98,096	217,374
Check-in desks	160 traditional/ 26 self-bag drop	89 traditional/ 74 self- bag drop	249 traditional/ 100 self-bag drop
Security	11 lanes	10 lanes	21 lanes
Outbound baggage	4,320 bags/hour	4,256 bags/hour	8,576 bags/hour
Gates	32	40	72
Air bridges	32	38	70
Immigration	28 traditional/ 25 e-gates	26 traditional/ 25 e-gates	54 traditional/ 50 e-gates
Arrival baggage	8 belts	11 belts	19 belts

2.3.13 North Terminal currently accommodates more than half of Gatwick's annual passenger traffic, processing 24.5mppa in 2017/18, while South Terminal processed 21.2mppa.

2.3.14 Associated facilities within the Passenger Terminal land-use category include office buildings, baggage handling facilities, boilers and chillers and air/cabin crew reporting facilities.

2.3.15 The train station adjacent to South Terminal (owned by Network Rail) provides access to a wide range of rail services. These include the Gatwick Express service to London Victoria as well the Southern and Thameslink networks. Both terminals also provide access to local and regional bus and coach services.

2.3.16 The two terminals are connected by an automated people mover, with two three-car trains running every few minutes between the terminals.

APRONS AND PIERS

2.3.17 Gatwick's apron area currently extends to 160ha comprising:

- Aircraft parking stands
- Taxiways
- Fuel farm
- Piers
- Support facilities (fire station, control tower, etc.).

2.3.18 The current stand provision is summarised in Figure 2.9. Many of Gatwick's aprons are configured to allow flexible parking. This allows stands that are used for overnight parking by small aircraft to be used later in the morning by larger but fewer aircraft. The table below presents the maximum numbers of aircraft parking positions for two situations - the maximum number of large aircraft and the maximum number of small aircraft.

2.3.19 There are six piers at Gatwick. Piers 1, 2 and 3 are at South Terminal and Piers 4, 5 and 6 are at North Terminal.

2.3.20 The Apron area also includes Gatwick's fuel farm, airport fire station and the control tower.

FIGURE 2.9: AIRCRAFT PARKING STANDS

	NUMBER OF STANDS (with maximum use by the largest aircraft)	NUMBER OF STANDS (with maximum use by smaller aircraft)
South Terminal pier-served	31	38
North Terminal pier-served	31	42
Remote parking stands	47	66
Total stands	109	146

CARGO FACILITIES

2.3.21 The Cargo Centre covers some 10ha. This is made up of 23,000m² of cargo sheds, plus office accommodation, areas for HGV loading, unloading and parking, and open equipment parking areas.

2.3.22 The cargo sheds are owned by a third party with a long-term ground lease. Gatwick has no direct commercial involvement with the cargo operation, although we do manage the Border Inspection Post located there. The inspection post is used for temporary storage, inspection and clearance of live animals and foodstuffs. The Gatwick direct logistics operation run by DHL, which consolidates deliveries and some of the waste collection operation, is also located in part of the cargo building.

AIRCRAFT MAINTENANCE

2.3.23 British Airways operates one hangar south of the runway on a 5ha site. In addition, there are currently two hangars to the north of the runway. One is operated by Virgin Atlantic Airways and the other, a hangar for EasyJet, is adjacent to the cargo shed. An additional two-bay hangar is being built north of the runway for use by Boeing. The site it occupies, between Uniform Taxiway and Brockley Wood, was earmarked for aircraft maintenance in the 2012 Master Plan. In total, all four maintenance hangars and associated aprons and parking areas occupy approximately 16ha.

ANCILLARY ACTIVITIES

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

- Hotels
- Offices
- Vehicle and equipment maintenance
- Contractors' compounds
- Filling stations
- Police station

2.3.25 A number of separate on-airport sites of this type occupy approximately 28ha.

FIGURE 2.10: CURRENT ON-AIRPORT PARKING SPACES

NORTH TERMINAL

SHORT STAY

2,099

Includes all spaces in the multi-storey car parks (MSCPs), including those for Valet operations

LONG STAY

6,266

Excludes 'Zone T' (counted as 'Summer Special')

SUMMER SPECIAL

5,277

Only storage space that is part of Summer Special site is counted here, other storage sites are included under "Valet".

SOUTH TERMINAL

SHORT STAY

2,803

Excludes floors used for Valet product

LONG STAY

9,180

Excludes H Zone (used for valet storage)

VALET

NORTH AND SOUTH

13,375

Includes all storage sites used for Valet product

TOTAL SPACES: 39,000

SURFACE TRANSPORT FACILITIES

2.3.26 Gatwick has excellent surface transport links, with direct access to the national motorway and railway networks. It was the first airport in the world to be developed with fully integrated airport, main road and mainline rail facilities.

2.3.27 The airport is located adjacent to the M23 motorway, approximately 25 miles south of central London, and less than 10 minutes from the M25. Gatwick Airport has its own mainline railway station, which serves over 18 million rail passengers a year. This makes it the busiest railway station in the South East outside central London. It has direct services to 129 other stations each day and up to 26 train departures an hour.

2.3.28 Surface 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. Together these occupy 154ha of airport land, around half of which is made up of car parks. This area also includes premium drop-off and valet facilities, waiting areas for taxis and coaches, the main bus and coach stations serving both Terminals, cycling facilities, pedestrian routes and the Terminals' forecourt road systems.

2.3.29 Gatwick itself manages around 27 miles of on-airport roads, ensuring they remain safe, well-maintained and clear for passenger, staff, operational, contractor and emergency vehicle access. Gatwick employs its own fleet of winter maintenance vehicles for snow and ice clearance and gritting roads and footways.

2.3.30 There are currently 39,000 car parking spaces 'on airport' and a further 21,196 authorised spaces 'off-airport'. Figure 2.10 shows the current parking provision on-airport. There are a further 6,200 spaces allocated for staff car parking.

39,000
car parking spaces 'on airport'

21,196
approved spaces 'off-airport'

6,200
spaces allocated for staff car parking

LANDSCAPING AND SURFACE WATER DRAINAGE

2.3.31 Gatwick includes approximately 144ha of land devoted to surface water drainage, and to agriculture and landscaping (both natural and planted). This includes two areas managed with the aid of Biodiversity Action Plans.

2.3.32 The main surface water drainage features are illustrated in **Plan 7**. These include local water courses, balancing ponds and pollution lagoons.

2.3.33 The main landscape and biodiversity assets are shown in **Plan 8**. Gatwick has a diverse range of landscape and biodiversity assets across the campus. These include mature native woodlands, ancient woodland and mature hedgerows. These all combine to form high-quality, attractive landscape features that enclose and screen the airport, as well as providing wildlife habitats.

2.3.34 Mature planted woodland, avenue and specimen trees provide a valuable element of our green infrastructure and important wildlife corridors throughout the airport. While of lower value than ancient woodland, this still forms important screening and provides green corridors for many species. Planted earth bunds around the airport also help to screen it from local communities.

2.3.35 Like the woodland, our natural watercourses provide important wildlife corridors and habitats for many species.

2.3.36 Public spaces connected with our main buildings allow easy access through the airport for passengers, visitors and employees. These routes, walkways and spaces are an essential part of the airport, but of limited biodiversity value. We are exploring opportunities to improve these spaces.

£1.11 billion

expenditure over the next five years

£1.5 billion

already invested since change of ownership in 2009

2.4 RECENT INVESTMENT PROJECTS

2.4.1 We review our investment strategy annually to give us greater flexibility in responding to changes in regulations and the needs of our airline customers and passengers.

2.4.2 The investment strategy is developed in consultation with the airlines in accordance with our commitments included as part of the CAA's economic licensing of Gatwick and is described in the Capital Investment Programme (CIP). This programme looks at Gatwick's plans for investment over the next five years and reflects significant investment in optimising the effectiveness of the airport based on a single runway operation.

2.4.3 The 2018 CIP outlines a total expenditure of £1.11 billion over the next five years, with £266 million of this already committed for 2018/19. This is in addition to the £1.5 billion that Gatwick has invested to-date since the change of ownership in 2009.

PROJECTS THAT HAVE RECENTLY BEEN COMPLETED

Airline moves and the transformation of North Terminal

2.4.4 One of the most significant recent projects was the 'Airline Moves' project which saw the consolidation of easyJet in North Terminal and the relocation of British Airways to South Terminal and Virgin Atlantic to North Terminal. All moves were completed in January 2017. This required the reconfiguration of airline lounges and crew report facilities along with significant changes to check-in desks at both terminals. Enhancements were made to the North Terminal's baggage reclaim hall and the security facilities were upgraded to match those in South Terminal.

2.4.5 Perhaps the most ambitious part of the programme was the creation of the world's largest self-service bag-drop facility in North Terminal. Improvements have also been made to the arrivals area. There is now an onward travel centre and new shops, whilst the whole area has been transformed to be more welcoming for arriving passengers. The final piece of this programme was the provision of a new walk-through duty free store which opened in September 2017.

Construction of the new South Terminal Baggage System and Pier 1

2.4.6 This project (opened in June 2016) includes an automated baggage handling system along with a 2,000 bag storage facility. Amongst the benefits of the new system are the ability for passengers to check-in earlier. Modern gate rooms and separate departures and arrivals routes have also been provided. It replaces the original Pier 1 which was the oldest pier at Gatwick.

Reconfiguration of the aircraft stands and upgrading gate rooms in Pier 5

2.4.7 This project was designed to increase the use and efficiency of the existing pier and apron by rebuilding them to modern standards. The reconfigured apron and pier offer more flexibility for different aircraft types along with better passenger facilities, simpler segregation of arriving and departing passengers, and a more efficient boarding operation.

North Terminal Pier 4 reconfiguration

2.4.8 Also at North Terminal we have reconfigured the stands on Pier 4. This has provided three additional centrelines for aircraft parking and servicing to enhance pier service levels.

North Terminal border area

2.4.9 Since 2015 we have increased the size of the immigration hall in North Terminal as well as installing 15 new automated gates to increase capacity and reduce queues. In addition, new ceilings and lighting have been installed in the border zone and toilets have been relocated to the baggage reclaim hall.

Commercial projects

2.4.10 We have completed a wide range of projects aimed at enhancing the retail and advertising offer of Gatwick across both terminals. These include the opening of a new walk-through duty-free store in North Terminal, new stores for Hamleys, Reiss, Superdry and Jack Wills, and a Jamie Oliver's Diner in South Terminal. Real-time bus information is now operating on the bus shelters around the airport and new or replacement digital advertising screens have been installed.

Additional car parking

2.4.11 We have recently completed a project to deck part of South Terminal's long stay car parking to provide an additional 1,565 spaces and we are working on plans for more spaces, as explained later in this document.

Digital technologies to support security and queue management

2.4.12 We have implemented face recognition and IRIS scanning security control technology for domestic passengers. We hope to extend this to international passengers over the next few years. We have also introduced highly-effective monitoring systems for check-in queues which allow queue waiting times to be accurately predicted. The entire CCTV infrastructure has also been upgraded as part of the Capital Investment Programme.

Enhancing our ability to maintain resilient and stable operations.

2.4.13 We invest around £10 million per year on projects which help deliver 'stable operations'. Some recent examples include:

- We have provided additional flood water storage capacity at the western end of the runway. In addition, a new pumping station was installed to help protect the transformer and airfield ground-lighting equipment. Flood protection measures have been implemented to prevent water entering North Terminal basement switch rooms.
- We have invested in a back-up power generation plant to ensure the uninterrupted performance of critical IT data rooms across Gatwick. Further investment has been made in standby power generation to safeguard the operation of critical systems.
- We have installed new uninterruptible power supply equipment to key communications facilities across Gatwick to mitigate the risk of future outages having a serious impact on our operations
- We also have ongoing programmes to replace Fixed Electrical Ground Power units and slot drains on the apron. We have made upgrades to the Fire Main and replaced elements of the roof of North Terminal.

Improving the environmental performance of the airport

2.4.14 In recent years we have invested in initiatives aimed at improving the Airport's environmental performance. One of the best examples of this is the Materials Recycling Facility which is aimed at improving the efficiency of Gatwick's waste management programme. Once it is fully operational, the amount of operational and commercial waste recycled at Gatwick will rise from 50% to around 80-85% by 2020.

Hold Baggage Screening

2.4.15 Work has been ongoing to deliver this project to meet the Department for Transport's requirement to replace screening equipment with "Standard 3" by 1 December 2019. An extensive pilot programme of three different manufacturer's machines in the first half of 2016 has shown the best machines for our baggage operation. The phased installation of the replacement equipment has started.

2.4.16 Various other projects are currently in the planning stages for delivery during the next few years. These are described in Chapter 4.

PROGRESS ON DELIVERING THE 2012 MASTER PLAN

2.4.17 The 2012 Master Plan indicated how the airport was expected to develop to a throughput of around 40mppa. The main change since this plan was published has been the much faster than expected rate of growth, with 40mppa being reached in November 2015, some six years sooner than anticipated. This rapid growth has required even more focus on the use of technology and process improvements to deliver the required levels of service. These improvements have enabled the existing infrastructure to deliver more capacity than anticipated when the previous master plan was published.

2.4.18 For example, it has not been necessary to expand the floor area of either Terminal. Instead there has been a major internal reconfiguration of North Terminal so that the existing floor areas are used more efficiently. This was not a solution that had been identified at the time of the 2012 Master Plan.

2.4.19 It has also not been necessary to build any new piers beyond the planned reconfiguration of Pier 5 and replacement of Pier 1. These improvements have permitted pier service levels to be maintained, although we are now actively progressing a project to expand Pier 6 as described later.

2.4.20 As anticipated there is still a requirement to deliver a new hangar to provide an enhanced aircraft maintenance capability to Gatwick's airlines. This is now being constructed in the North West Zone as envisaged by the 2012 Master Plan.

2.4.21 Design and implementation of some of the suggested surface access improvements is ongoing. For example we have recently completed works to improve the North Terminal forecourt. Planning continues for further improvements to the pedestrian access between South Terminal and local bus stops located on the A23. A project is currently examining the best way to deliver these improvements to achieve the desired access requirements within the site constraints.

2.4.22 All that said, the infrastructure improvements which the 2012 Plan suggested were necessary to support a throughput of 40mppa have to a large extent been, or are in the process of being, delivered. In Chapters 4 and 5, we explain our analysis of the future development requirements that we believe are necessary to maintain targeted service levels as the airport continues to grow.

The investment projects envisaged in the 2012 master plan have, to a large extent, been delivered or are in the process of delivery.

3 LOOKING AHEAD

MARKET AND POLICY DEVELOPMENTS

3.1 MARKET TRENDS

CONTINUED GROWTH IN LOW-COST TRAVEL

3.1.1 The trend towards 'low-cost' airlines that started 20 years ago, revolutionising global air travel, has continued. Supported by the deregulation of aviation markets within Europe and elsewhere, low-cost airlines have opened up new routes and destinations to business and leisure travellers, and have stimulated 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.

3.1.2 Gatwick has been at the centre of this lowcost revolution. In the last 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.

3.1.3 Gatwick is also playing a key role in the emergence of low-cost long-haul services, supporting an expanding network of such routes flown by airlines such as Norwegian and WestJet.

3.1.4 Full service or 'legacy' airlines are also exploring these markets, with several of the largest European airline groups setting up low-cost brands, such as LEVEL for IAG and Eurowings for Lufthansa group. Both of these airlines operate in low-cost long-haul and short-haul services.

3.1.5 However, demand remains for full service airlines and these also have growth plans. IAG acquired the Monarch slot portfolio which is now operated mainly by British Airways, opening up new routes and supporting existing mature markets. Gatwick therefore continues to see growth in inbound full-service airlines, operating on both short-haul and long-haul routes.

NEW GENERATION AIRCRAFT

3.1.6 New generation aircraft are entering service which are much more fuel efficient owing to improved engine technology and lighter weight airframes, made possible through the use of composite materials in their construction.

3.1.7 These new-generation aircraft, which are able to fly further at economically attractive prices, are opening up an increasing number of direct long-haul point-to-point routes which are proving very appealing to international passengers and attracting traffic which would previously have travelled through hub airports. Gatwick already has five airlines which operate the B787 Dreamliner and Airbus A350 on long-haul services.

3.1.8 The same technology improvements are being introduced into narrow-body aircraft such as the B737 Max, A320 Neo and A321 Neo, and these aircraft will become the largest part of the fleet operating at Gatwick within the next 10-15 years. As well as improved fuel efficiency they also offer substantial noise reductions compared to the previous generation of aircraft.

THE EMERGENCE OF NEW TRANSFER HUBS

3.1.9 London continues to play an important role as a transfer hub for transatlantic services, due in part to its geographic location and strong local market. Along with other European hubs, it has also served as a transfer point for markets flowing to the Middle East and Asia. However, with the growth of new hub airports in for example Turkey, the Gulf and Asia, there has been a significant decline in the share of transfer passengers choosing to route via European hub airports. Gatwick is already well connected to many of these new hub airports and added Qatar Airways with double daily flights to Doha in May 2018. In addition the increase in new long-haul, point to point services has eliminated the need for a hub on many flows entirely. This has been driven by the emergence of long-haul, low-cost carriers which have now gained a meaningful share of demand on transatlantic routes

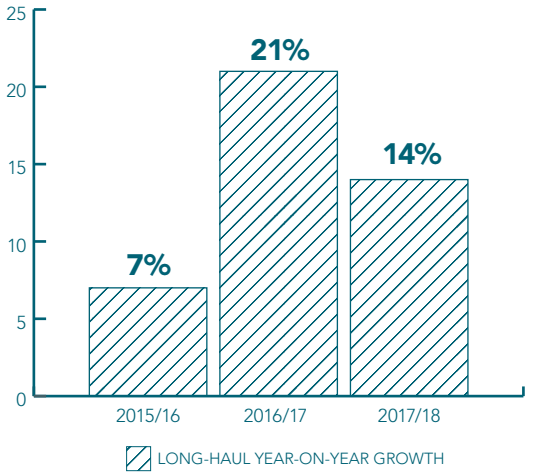
3.1.10 Looking ahead, transfer passengers will remain an important part of London's aviation market. However, owing to the presence of a strong and growing local demand for air travel; increased capacity at other better positioned hubs; and new direct long-haul routes to and from the UK; the significance of transfers at London airports will continue to decline. Gatwick's airlines have already demonstrated the ability to serve established and emerging long-haul markets with over 60 long-haul routes now being operated from the airport.

EMERGING GLOBAL MARKETS

3.1.11 London remains the world's biggest aviation market and the 3rd most visited city in the world. Therefore it is one of the first long-haul destinations that airlines seek to connect to. It is also a destination that copes well with growth, with many cities connected with multiple daily frequencies.

3.1.12 There is strong demand from China, India and Africa, supported by a liberalisation of Air Service Agreements and traffic rights allocation, as well as by economic growth. As these economies become richer, their populations grow wealthier driving a desire to travel. We are already well connected to Asian markets and these routes have seen very high growth rates. China Eastern will begin flights between Gatwick and Shanghai in December 2018.

FIGURE 3.1: GROWTH IN GATWICK LONG-HAUL PASSENGERS – 2015 TO 2017



NEW WAYS OF BUYING TICKETS

3.1.13 As low-cost airlines continue to grow and offer cheaper tickets to a wider range of destinations, passengers are seeking to use these flights to create their own connecting opportunities where direct services are unavailable or more expensive. In order to simplify the process for making these 'self-connections', we created the 'GatwickConnects' product. This helps passengers find and book connecting flights, and smooths the process of transferring between flights at Gatwick.

3.1.14 In late 2017, easyJet extended the GatwickConnects concept further, by distributing it through its website and creating a product 'worldwide by easyJet' which enables self-connections across its network. This concept continues to evolve with ongoing product developments from airlines, airports and distribution channels working towards mainstream adoption.

AIR FREIGHT

3.1.15 Growth in air freight follows growth in long-haul passenger traffic, as exporters and importers take advantage of passenger-led route development to ship goods around the world in the belly-holds of aircraft flying those routes. As the number of long-haul services at Gatwick increases, the recent trend of strongly growing freight volumes handled at the airport is likely to continue. In 2018 Cargo throughput at Gatwick is growing at about 25% per annum.

EXITING THE EUROPEAN UNION

3.1.16 The UK's exit from the EU inevitably brings a period of some uncertainty for the aviation industry. Nevertheless the Government has made clear that one of its key objectives is to establish an ambitious new aviation relationship with the remaining member states, including market access. The emerging Aviation Strategy makes clear the government's intention to examine the UK's air service agreements to ensure these are used to drive even more connectivity and competition for the benefit of the consumer.

CONCLUSION ON MARKET TRENDS

3.1.17 In conclusion, a review of the market trends highlights a number of reasons why Gatwick is well placed to deliver additional traffic growth:

- It has a proven track record of supporting the continued expansion of low-cost airlines, and particularly their growth into long-haul markets;
- It is also able to support legacy airlines which are adapting to compete effectively;
- It provides access to London for the transfer hubs in the Middle East and Far East which are growing so rapidly;
- It is a leader in adopting new processes and technologies which provide customers with more choice on how they purchase their tickets and other air travel services;
- It is already home to a growing fleet of new generation aircraft which support new long-haul, point-to-point services.

3.1.18 Gatwick's location, and its ability to deliver efficient flexible infrastructure, mean that we are well placed to benefit from these trends.

3.2 TRAFFIC GROWTH

GOVERNMENT AIR TRAVEL FORECASTS

3.2.1 The Government's latest forecasts, produced by the DfT, show air travel in the UK growing from 267m passengers in 2016 to 410m passengers in 2050 without a new runway, or to 435m passengers in 2050 with a new third runway at Heathrow[4]. However this is less than the underlying, unconstrained demand, which the DfT forecasts to be 495m passengers in 2050.

3.2.2 This indicates that even with a third runway at Heathrow there is insufficient airport capacity to meet the unconstrained demand for UK air travel. This 'capacity gap' is forecast by the DfT to be evident in 2030 and 2040 and to increase over time.

3.2.3 Capacity constraints will be most apparent in the London airport system where there is the most serious shortage of runway capacity. The DfT's forecasts show that by 2025 the main London airports, with the exception of Stansted, are expected to be effectively full. The constrained nature of the London airport market, along with the fact that it attracts more air passengers than any other city, provides a high level of confidence that additional capacity will quickly become utilised.

GROWTH AT GATWICK

3.2.4 As outlined above, Gatwick is well placed to compete to win a significant share of this growth scenario, notwithstanding the growth plans at Heathrow and of other South East airports:

- It has a strong base of low-cost and legacy airlines (see section 2.2);
- It has a strong catchment area with excellent rail access across London, the South East and beyond;
- It has efficient flexible infrastructure, and competitive airport charges;

3.2.5 Although the DfT's latest forecasts for Gatwick show throughput constrained to 45mppa until 2030 and then growth to 50mppa by 2040, this is acknowledged to be a cautious assumption pending the publication of a new master plan. There is a history of Gatwick's traffic throughput being underestimated by the DfT's forecasting model, and passenger numbers at Gatwick in 2018 already exceed the DfT's latest forecast for 2030.

3.2.6 The strong demand for the former Monarch slots at Gatwick, despite the fact that a number of other South East airports had capacity available, confirms the continued attractiveness of the airport to airlines.

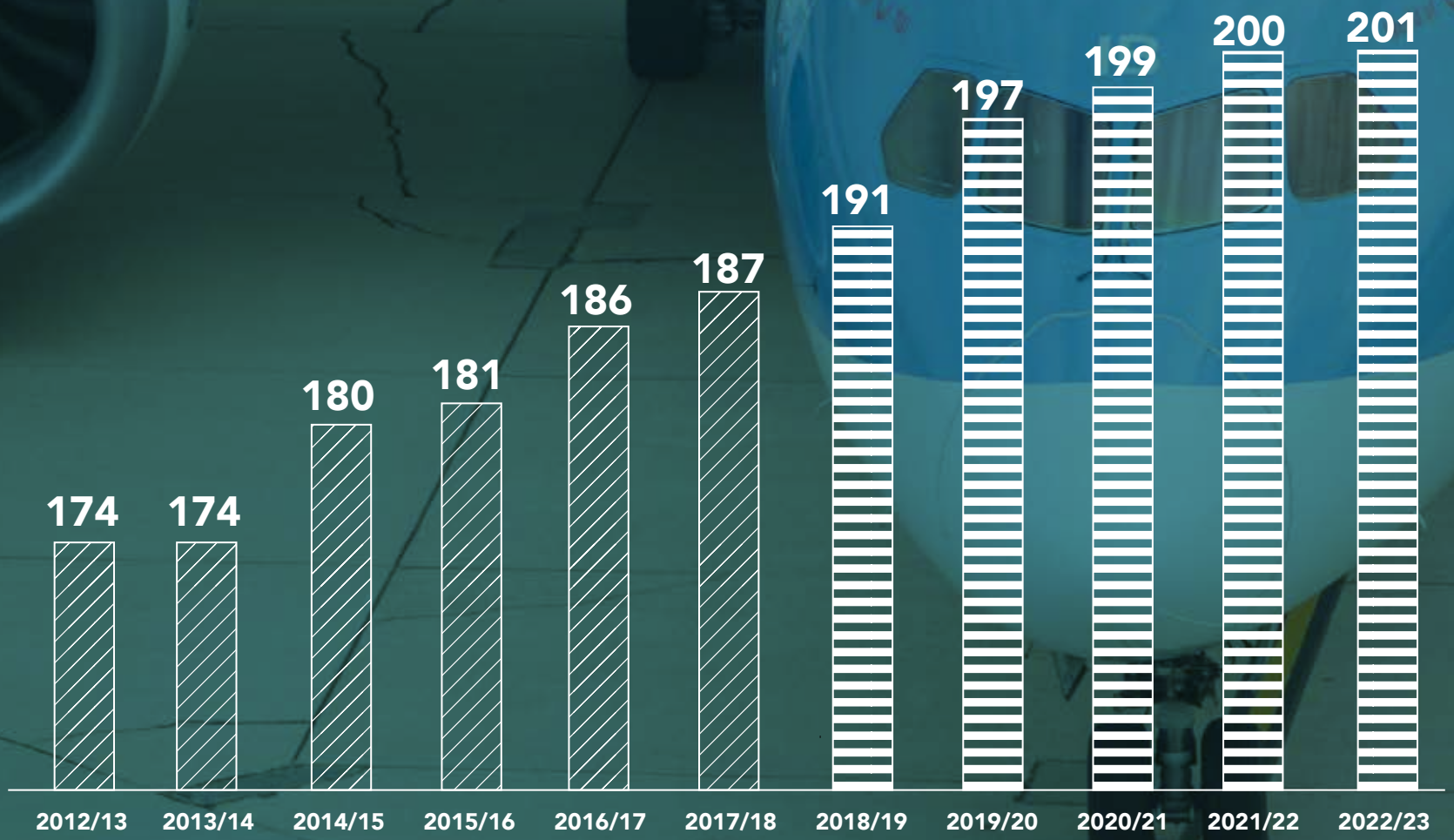
3.2.7 In recent years Gatwick has proved that it can provide the right type of capacity to meet the growing demand, and particularly the types of efficient, flexible infrastructure which low-cost operators require. In addition to addressing the short-haul market, Gatwick is actively supporting development of new long-haul destinations to both existing and emerging markets. Gatwick now serves over 60 long-haul destinations for a full range of airline business models. This already exceeds the number of long-haul routes that the Airports Commission forecast Gatwick would have in 2050 with an additional runway.

3.3.8 As operators look to reduce costs and maximise the use of the available capacity at Gatwick and elsewhere, we are seeing a shift towards the use of larger-gauge aircraft. In 2017/18 there were on average 163 passengers per air traffic movement at Gatwick, an increase from 140 in 2011/12. We expect this trend to continue. For example, Gatwick's largest carrier easyJet is now taking delivery of A321 sized aircraft which should increase their average passenger loadings by a further 20%. The continued growth of long-haul is also increasing the number of passengers per aircraft movement as the aircraft used are typically significantly larger than those on short-haul flights. This ongoing trend for larger aircraft is illustrated in Figure 3.2 which shows how the number of seats per aircraft has increased, and is expected to continue increasing over time.

3.2.9 Another trend at Gatwick which is continuing to deliver growth is the spreading of services into the traditionally quieter times of the year. Long-haul services tend to be less seasonal but we are seeing short-haul airlines also taking up runway slots at times that were previously less attractive. Gatwick is still significantly more seasonal than either Heathrow or Stansted and we therefore see the opportunity for more services outside the peak periods of the year.

[4] *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/674749/uk-aviation-forecasts-2017.pdf*

FIGURE 3.2: GROWTH IN AIRCRAFT SIZE (REPRESENTED BY SEATS PER AIRCRAFT MOVEMENT) AT GATWICK – 2012 TO 2022



3.3 GOVERNMENT POLICY

AVIATION POLICY

Aviation Policy Framework 2013

3.3.1 Current Government policy on aviation strategy is set out in the 2013 Aviation Policy Framework (APF). This recognises the important role and major contribution the aviation sector makes to the UK's long term economic growth. It sets out its support for the growth of the sector within a framework which maintains a balance between the benefits of aviation and its costs, particularly its contribution to climate change and its noise impacts.

3.3.2 The APF set out the Government's four main objectives:

- To ensure that the UK's air links continue to make it one of the best connected countries in the world. This includes increasing our links to emerging markets so that that the UK can compete successfully for economic growth opportunities.
- To ensure that the aviation sector makes a significant and cost-effective contribution towards reducing global emissions
- To limit and where possible reduce the number of people in the UK significantly affected by aircraft noise.
- To encourage the aviation industry and local stakeholders to strengthen and streamline the way in which they work together.

3.3.3 Within these objectives the APF set out that a key priority in the short term is to make the best use of existing capacity at all UK airports.

New Aviation Strategy

3.3.4 The APF will soon be replaced by a new Aviation Strategy – The Future of UK Aviation – that will set out long term policy to 2050 and beyond. A first phase of consultation on policy issues commenced in July 2017 and has now been completed. The Government is working on a Green Paper which it plans to publish in the Autumn of 2018, followed by the completed Aviation Strategy in the first half of 2019.

3.3.5 For this new strategy the Government has confirmed that its aim 'is to achieve a safe, secure and sustainable aviation sector that meets the needs of consumers and of a global, outward-looking Britain'. The strategy is expected to be based around six core objectives which are:

- Help the aviation industry work for its customers
- Ensure a safe and secure way to travel
- Build a global and connected Britain
- Encourage competitive markets
- Support growth while tackling environmental impacts
- Develop innovation, technology and skills

3.3.6 Following its Aviation Strategy call for evidence, and further analysis, the Government has recently set out its policy support for airports, beyond Heathrow, to make best use of their existing runways, subject to full consideration of related economic and environmental impacts and proposed mitigations[5]. Gatwick welcomes this policy position which we see as in important enabler for airports other than Heathrow to play their parts in meeting the growing demand for air travel to and from the UK.

NATIONAL POLICY STATEMENT

3.3.7 The Government has recently designated its Airports National Policy Statement (NPS) which provides policy support for a third runway at Heathrow. This follows nearly six years of study by the Airports Commission and the Department for Transport – a process in which we participated fully with our own scheme for a new runway to be built to the south of the existing airport.

3.3.8 Although we strenuously made the case for a new runway at Gatwick, we accept that it is current Government policy to instead supports the third runway at Heathrow and it is now for Heathrow's owners to seek development consent for that project within the terms set out by the NPS.

3.3.9 In light of this policy position we are not actively pursuing a new additional runway. However, should this or a future Government decide to support a new additional runway at Gatwick, then we would be ready to re-examine this with a view to seeking development consent. In the meantime the land required for an additional runway should continue to be safeguarded from incompatible development, in line with current Government policy.

[5] *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714069/making-best-use-of-existing-runways.pdf*

3.4 AIRSPACE MODERNISATION

AIRSPACE MODERNISATION STRATEGY

3.4.1 The airspace above the South East of England was designed in the 1950/60s and is rapidly approaching the limit of its capacity. The current airspace design contains choke points, restricts the free flow of traffic and requires the use of outdated air traffic management solutions. This increases delays, operating costs and fuel burn, and intensifies the environmental impacts (noise and emissions) experienced by those residing close to flight paths.

3.4.2 DfT forecasts that UK air passenger numbers will grow by around 30% by 2030. However, UK airspace also needs to accommodate overflights – for example transatlantic services from Europe. Taking account of both of these factors NATS estimates that by 2030 there will be an additional 1 million aircraft movements per year, compared to 2015, through UK airspace. Unless action is taken, the current airspace design is likely to lead to more than 1 in 3 flights being delayed by at least 30 minutes.

3.4.3 Government acknowledges that urgent action is now needed to address this issue and has instructed[6] the Civil Aviation Authority (CAA) to prepare a co-ordinated strategy for the modernisation of UK airspace up to 2040. As a result the CAA is developing a new 'Airspace Modernisation Strategy' which it plans to publish by the end of 2018.

FUTURE AIRSPACE STRATEGY IMPLEMENTATION

3.4.4 A key part of the Airspace Modernisation Strategy will be a programme to transform the airspace above Southern England. This is known as the 'Future Airspace Strategy Implementation (South)', or FASI(S). Within this programme, NERL (the en-route arm of NATS) is responsible for the design of the airspace above 7,000 feet. This element of the work is known as London Airspace Modernisation Programme (LAMP).

3.4.5 This is a comprehensive and complex redesign project. It is currently envisaged by NATS that the first phase of implementation could not take place before early 2024. However this redesign offers a unique opportunity to address many of the legacy issues that have constrained the aviation industry's ability to minimise environmental impacts. For example, it has the potential to offer new ways of offering noise respite to communities currently overflown and to permit aircraft to climb more steeply and continuously to their cruising altitudes.

3.4.6 All the airspace redesign will be done in accordance with the CAA's Airspace Change Process, which is detailed in CAP 1616. This process puts transparency and public engagement at the heart of all activities.

3.4.7 To support this Government initiative we will work closely with the CAA and NATS during this process which will require us to consider how the airspace below 7,000ft around Gatwick will need to be modified to support the Airspace Modernisation Strategy objectives. Any proposed changes that are necessary will be fully consulted on before being implemented.

3.4.8 In order to deliver a stable airspace solution, suitable for the next 30-40 years, we will seek a design which could accommodate all potential growth scenarios at Gatwick whilst minimising their environmental impacts.

[6] *Air Navigation Directions (October 2017)*

4 MASTER PLAN FOR THE NEXT 5 YEARS

2018 TO 2022

4.1 INTRODUCTION

4.1.1 Although Gatwick is already heavily utilised, we expect that passenger throughput will continue to grow over the next five years. This chapter explains this growth and highlights our plans to further develop the airport's infrastructure through our 2018 Capital Investment Programme (CIP) which projects investment of £1.11bn in the five year period. This chapter also sets out our Airport Surface Access Strategy and expected sustainability performance over the next five years.

4.2 TRAFFIC PROJECTION

IMPROVING THE RUNWAY OPERATION

4.2.1 The existing main runway at Gatwick is a key piece of national transport infrastructure which needs to be operated safely and efficiently. We believe that at peak times it is already busier than any other airport runway and its level of throughput has been gradually increasing over many years. We want to make use of its full capacity potential but also improve the resilience of the operation, in order to reduce delays and disruption.

4.2.2 To achieve this we are exploring a number of technology and process initiatives as well as some changes to the runway infrastructure. We are developing a programme of work to implement these changes over the next few years and in this we will be working closely with ANS, the provider of Gatwick's Air Traffic Control (ATC) services, and with our airline community.

4.2.3 Improvements in the runway operation can be realised through the introduction of new operating procedures and air traffic management tools. These will help the efficiency with which arriving and departing flights use the runway. With more efficient sequencing and more accurate orchestration of aircraft movements, the amount of 'dead time' between runway movements can be reduced, thus increasing capacity. It will also improve the resilience of the airport and help reduce delays.

4.2.4 Expected improvements include the introduction of 'time-based separation' which allows a more accurate method of spacing arriving flights than the current method based on fixed-distance separations. We also expect to realise the benefits of integrating a suite of new air traffic management tools (for example AMAN and DMAN) that have been developed to increase the predictability of departure and arrival flows.

4.2.5 In addition to the improvements mentioned, we are working very closely with ANS on a number of key initiatives to improve control of aircraft on the ground, reduce controller workload and improve the sequencing of aircraft prior to departure.

4.2.6 We are also looking at the runway and taxiway infrastructure and we are considering a number of improvements including the provision of a new rapid exit taxiway (RET), enhancement of instrument landing systems and the updating of ground lighting to provide taxiway routing guidance to pilots.

2017/18

163

AVERAGE NUMBER OF PASSENGERS PER FLIGHT

LIKELY TO INCREASE

2022/23

176

AVERAGE NUMBER OF PASSENGERS PER FLIGHT

TRAFFIC FORECASTS

4.2.7 As these operational improvements are introduced we will consider whether it is appropriate to increase the peak hour movement capacity of the runway. For the moment we have no immediate plans to increase this above 55 scheduled flights per hour. However it is possible that a small increase will be made within the next five years. We also expect there to be a limited release of additional slots in the evening off-peak period to allow for traffic growth.

4.2.8 We expect to see a continuation of the airlines' strategy of upgrading to larger aircraft, for example the purchase of A321s by easyJet. This trend is likely to increase the average passengers per flight from 163 in 2017/18 to 176 by 2022/23. We also see further potential for peak spreading and the addition of more flights in the traditionally quieter times of the year.

4.2.9 The traffic forecasts for the Gatwick over the next five years are shown in Figure 4.1.

4.2.10 As is the case with all the forecasts presented in this draft master plan, Figure 4.1 assumes that the levels of flying permitted by the DfT within the night quota period remain the same as today[7].

FIGURE 4.1: TRAFFIC FORECASTS UP TO 2022/23

	2017/18 ACTUAL	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023
Passengers (m)	45.7	47.1	49.1	50.6	52.0	52.8
ATMs	280,790	284,270	289,770	294,490	297,670	300,000
Passengers per ATM	162.7	165.7	169.4	172.0	174.7	176.0

[7] *The night quota applies between 23:30 and 06:00. These night quotas, set by the DfT, are 11,200 flights during the summer and 3,250 flights during the winter season*

4.3 CAPITAL INVESTMENT PROGRAMME

OUR CAPITAL INVESTMENT PROGRAMME

4.3.1 Our 2018 Capital Investment Programme (CIP)[8], contains development projects with expenditure amounting to £1.11 billion over the next five years through to 2022/23, with £266 million planned for 2018/19 alone. The projects assume that during this period Gatwick will grow to a throughput of 53mppa.

4.3.2 Infrastructure projects are needed for a variety of reasons. We have identified six different drivers for investment decisions, which are:

- EHS, Security and Compliance
- Asset stewardship and resilience
- Capacity
- Service quality
- Cost efficiencies
- Commercial revenue

4.3.3 The key projects which will result in noticeable physical changes to the airport are described below and are illustrated in **Plan 9**.

Customer service

4.3.4 It is vital that our CIP reflects our customers' requirements and expectations. For our airlines we achieve this through bilateral and multilateral discussions where we share ideas, issues and opportunities to improve the airport and its operation.

4.3.5 However we also need to understand our passengers' needs, not least because we engage with them directly, for example at security search and the provision of special needs services.

4.3.6 One of our strategic priorities is to be the passengers' airport of choice. To achieve this we need to position our services so that passengers choose to fly with Gatwick airlines, rather than those of the other airports. We need to offer a high level of service, a competitive commercial offer (for example in our various car park products) and work with other parties, such as Border Force, handling agents and the train station operator to ensure an overall high quality airport experience.

4.3.7 Retail income helps to reduce the charges we make to the airlines. However maximising retail and catering income is not just about the quality of the offer. We also need to ensure the entire passenger journey through the airport is as stress-free as possible so that passengers have the time and inclination to make use of the facilities available.

4.3.8 Wide-ranging customer engagement is required in order to develop the right offer to Gatwick's users. In order to shape our development plans we track:

- How we are performing in terms of service over time
- Direct feedback from our passengers, both in terms of compliments and complaints. This can be both spontaneous (i.e. social media) or provided after the event.
- How we are performing in terms of service relative to our competitor airports, other comparable airports and other service industries.
- Customer preferences and priorities, including passengers in both general and specific groups.
- The perspectives of potential and future customers.
- Developments at other airports.

AIRFIELD PROJECTS

Runway resurfacing

4.3.9 Our main runway is intensively used and needs regular maintenance, including periodic resurfacing. This is to ensure it complies with all safety regulations and can be relied upon to serve almost 1,000 movements a day in the busy summer period. We have a programme of maintenance of both the main runway and standby runway planned over the next five years, including a full resurfacing of the pavements.

Boeing hangar

4.3.10 In November 2016 we announced that we were working with Boeing to deliver a new maintenance hangar. This will provide an operating base for Boeing's premium-line maintenance service for its Gatwick-based

[8] *gatwickairport.com/cip*

FIGURE 4.2: KEY PROJECTS 2018 TO 2022

	PROJECTS	PRIMARY PURPOSE
AIRFIELD	Runway resurfacing	Asset stewardship and resilience
	Boeing Hangar	Commercial revenue
	Lima taxiway extension	Resilience
	Rapid exit taxiway	Capacity and resilience
	Pier 6 extension	Service Quality
	Push and hold stands	Resilience
	Additional remote stands	Resilience
	Flood mitigation	Asset stewardship and resilience
TERMINAL	Check-in and bag drop	Service Quality
	CTA / domestic bag reclaim	Service Quality
	Departure lounges	Service Quality and Commercial Revenues
OPERATIONAL EFFICIENCY & RESILIENCE	ATC technology and process improvements	Assest stewardship and resilience
SURFACE ACCESS	Rail Station	Service Quality
	Bus and coach facilities	Service Quality
	Car rental	Resilience
	Road improvements	Service Quality and Resilience
	Car parking	Capacity

customers. Planning permission was granted in October 2017 and the hangar is now under construction.

4.3.11 The hangar will be located at the western end of the airfield, accessed from Uniform taxiway, on a site identified for a new hangar in the 2012 Master Plan. This will be large enough to accommodate two B777X aircraft. Gatwick has invested in enabling works for the site, while the hangar construction is being delivered by Boeing. This development will offer significant employment, training and apprenticeship opportunities, including the creation of circa 100 jobs.

4.3.12 An architect's impression of the completed Boeing Hangar is shown in **Plan 10**.

Lima taxiway extension

4.3.13 As the airport becomes busier it is important to ensure the free-flow of aircraft on the taxiway system to avoid unnecessary delays caused by congestion. One potential improvement is the extension of the existing Lima taxiway westwards to connect with the northern end of Uniform taxiway. This would provide air traffic controllers with an additional east-west taxiing routing option to ease congestion on Juliet taxiway. The extension of Lima taxiway also supports the later construction of new stands and potentially a new pier, as described in the next chapter.

4.3.14 The delivery of a Lima taxiway extension is currently just outside our five-year capital plan and therefore is not included in the 2018 CIP. However it is possible that it will be advanced and therefore is noted here as a potential investment that may be under construction at the end of the five year period.

Rapid Exit Taxiway

4.3.15 Another project that is outside our current 2018 CIP but we are considering bringing forward is the provision of a new Rapid Exit Taxiway (RET) for Runway 26. This would reduce the length of time that the runway is occupied by an arriving aircraft which should reduce the number of go-arounds, where arriving aircraft have to abandon their landings. It may also have a small capacity benefit.

North Terminal Pier 6 extension

4.3.16 To maintain pier service levels in North Terminal as the airport continues to grow, we require further pier-served stands. One of the solutions for meeting this requirement is to build a western extension on Pier 6. This is a major and complex programme of works which involves creating a new A380 stand on Pier 5 and the associated reconfiguration of Quebec taxiway to provide access to the new stand. The new extension will offer 8 new pier-served stands capable of taking any Code C aircraft and bring into service an existing unused stand (103) to give a total of 17 stands on the pier when completed. Works are currently focusing on scoping, designing and planning the delivery of this programme.

4.3.17 An architect's impression of the completed Pier 6 extension project is illustrated in **Plan 11**.

Apron projects

4.3.18 Although we drive for greater punctuality of the operation there will inevitably be times when aircraft are delayed and unable to take off on schedule. This can be caused by a variety of issues, for example air traffic control restrictions caused by airspace congestion or bad weather.

4.3.19 To minimise disruption caused by these delays, and to maintain levels of pier service, we are exploring the possibility of converting a number of existing remote stands into 'push-and-hold' stands. Departing aircraft can push back on schedule and taxi to the new stands which provide an intermediate holding point, close to the runway. The pier served stands thus vacated are then available for other flights to use, helping the planned schedule to be kept and pier service levels to be maintained. As a possible location, we are examining reconfiguring an existing area of remote aircraft parking (See Plan 9 for location), which is ideally located for push-and-hold operations. It is likely that work to construct these push-and-hold stands will be underway at the end of the five year period.

4.3.20 The construction of the push-and-hold stands, and several of the other airfield projects described above, may impact on the availability of existing aircraft parking stands. Depending on the final construction sequence and programme, this may generate a shortfall in stand numbers. If this is the case it may be necessary to build additional stands to maintain an adequate supply of parking positions. A possible location for this new parking apron is south of the Virgin Hangar on an area used primarily for vehicle and equipment maintenance. This site is indicated on **Plan 9.**

Flood mitigation

4.3.21 We are prioritising the flood protection of 20 critical airport assets that will enable us to continue to operate in 1:200 flood event. This work includes improvements to substations to provide them with greater flood protection. We are also making specific improvements to facilities relating to the Gatwick Stream Flood Alleviation Scheme.

TERMINAL PROJECTS

Check-in automation and bag-drop

4.3.22 Following successful implementation of the North Terminal Level 10 bag-drop project many of our airlines would like to roll out more self-serve check-in and bag-drop infrastructure in both terminals. Our current CIP makes allowance for this, but the precise locations and solutions will depend on the outcome of ongoing discussions with our airlines.

4.3.23 The benefit to passengers will be reduced queues as a result of check-in process efficiencies. The technology and infrastructure solutions also offer the opportunity for reduced costs for airlines, and greater flexibility for them to respond to the service expectations of their passengers.

CTA/Domestic reclaim

4.3.24 The recent project to replace South Terminal's Pier 1 was designed for international passengers only. South Terminal does however process small numbers of domestic passengers. On arrival these passengers are coached to a domestic baggage reclaim belt adjacent to, but segregated from, the international reclaim hall. In 2015 the Border Force altered their requirements for the processing of passengers from the Common Travel Area (CTA) airports, i.e. Ireland, the Channel Islands and the Isle of Man. In essence, passengers from these destinations must now be physically segregated from international arriving passengers – as is the case already with domestic passengers. This change resulted in all inbound CTA passengers also being transferred by bus from their aircraft to the domestic arrivals route. When added to the domestic passenger numbers, this means over 2 million passengers per year receive an experience which is considered inferior to that of international arrivals.

4.3.25 This CTA/Domestic reclaim project would create a segregated walking route from Pier 1 for both CTA and domestic arriving passengers as well as a new CTA/domestic baggage reclaim facility. Passengers would enter the main South Terminal concourse adjacent to the current 'Lower Zone B' check-in area.

4.3.26 With the creation of the new domestic belt at Pier 1 the current domestic reclaim belt would revert back to an international belt, with the simple removal of the wall between the two reclaim halls.

Departure Lounges

4.3.27 Peak occupancy of our departure lounges is affected by passenger throughput but is also sensitive to factors such as fleet mix and destinations served. As airlines up-gauge their aircraft, passenger volumes in the departure lounges may rise. Passengers' expectations on services and amenities also change over time. For example, we have seen a significant increase in demand for food and beverage outlets, and the mix of catering is becoming more complex.

4.3.28 We will shortly be progressing the creation of a larger mezzanine floor in the North Terminal departure lounge. This will accommodate new restaurants and provide additional seating space for passengers. We are also exploring options for expanding the South Terminal departure lounge.

SURFACE ACCESS PROJECTS

Improved rail station

4.3.29 Gatwick's railway station, on the main line between London and Brighton, is one of the busiest in the country, and has been struggling to cope with rising numbers of trains and passengers. Despite the excellent rail links available from the station, the passenger experience and first impression of onward travel for arriving passengers could be significantly improved. Gatwick is working with Network Rail, the owners of the station, to develop plans to expand and improve the concourse areas. This will add more vertical circulation to the busiest platforms to facilitate platform clearance and provide new enhanced pedestrian routes. The proposed scheme will be jointly funded by the airport, Network Rail and DfT, costing around £120m, and is due for completion by 2022/23.

4.3.30 An architect's impression of the completed rail station is shown in **Plan 12**.

Bus and coach facilities

4.3.31 We are exploring the possibility of providing additional bus and coach bays at North Terminal in the vicinity of Jubilee House where there are some existing coach bays accessed from Furlong Way.

Car rental facilities

4.3.32 This project is necessary because much of the existing South Terminal car rental operation will be displaced to form a logistics site for the construction of the improved rail station. Although we plan to retain the existing reception building which accommodates the rental desks, the car storage area is expected to be relocated to one of the existing multi-story car parks. Once the station construction work is completed, the logistics site will be available for other commercial uses.

Road improvements

4.3.33 Traffic conditions approaching Gatwick and Crawley will be substantially improved by the completion of the Highways England M23 Smart Motorway project. This project will add an extra running lane between M23 junctions 8 and 10 and on the westbound M23 Spur from junction 9 to 9a. This will help to reduce peak congestion and accommodate traffic growth. It will also introduce the latest technology for incident management and traffic control.

4.3.34 However this, and the growth in road traffic, will place additional pressure on the capacity of South Terminal entry roundabout (M23 Junction 9a) and the North Terminal entry roundabout, and the capacity at both junctions will therefore need to be increased to improve traffic flow. We are undertaking a planning and design process for proposed improvements that includes local widening on junction entry/exit lanes, adding signals to existing roundabouts and enhanced signing.

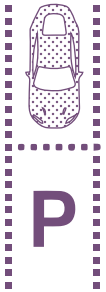
4.3.35 We are reviewing signage and access elsewhere around the airport to support our responsibility to maintain safety on our roads. We are also promoting the use of electric vehicles through our service providers (local taxi, bus and car share operators) as well as the airport's own fleet, and increasing the number of charging points publicly available.

Car park projects

4.3.36 With a view to increasing car parking supply, and developing our range of car parking products, we have identified two sites for additional multi-storey car parking, one at each terminal. Both sites are close to the terminals and will provide step-free, covered access into arrival and departure zones.

- Multi-storey car park 7 would create approximately 3,000 spaces in a multi-storey structure on the site of a current staff car park located just to the north of North Terminal. Road access to the car park would be from Longbridge Way (via North Terminal Roundabout).
- Multi-storey car park 4 at the South Terminal would create approximately 1,500 spaces in a multi-storey structure. This would be on the site of a current surface-level park for high-sided vehicles, adjacent to the other South Terminal multi-storey car parks. Road access would be the same as for the existing South Terminal Short Stay parking, from South Terminal Roundabout and via Ring Road South. Pedestrian access to and from the terminal would be via the current access point and covered link bridges over the railway.

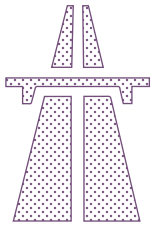
4.3.37 In addition we will reprovide any existing spaces lost as a result of the developments listed above; such as the extension of Lima taxiway.



WE ARE PLANNING AN ADDITIONAL

4,500

MULTI-STOREY CAR PARK SPACES



M23

SMART MOTORWAY SCHEME WILL ADD

a new running lane in each direction between junction 8 and 10


NORTH
TERMINAL
Gatwick
Lifts to
departures
Lifts
Lifts

4.4 AIRPORT SURFACE ACCESS STRATEGY

OUR VISION, OBJECTIVES & TARGETS

4.4.1 In May 2018 GAL published its new Airport Surface Access Strategy (ASAS), a five-year plan setting out an objective-led vision for sustainable access to and from Gatwick. Access to and from the airport is an essential part of Gatwick's ambition to grow and become London's airport of choice.

4.4.2 Although not a statutory document, the ASAS sets out important targets and action plans, which will be monitored by key stakeholders and provide the focus of activity for Gatwick's Surface Transport Team.

4.4.3 Our road and rail connections are essential to our passengers and staff. They ensure people and goods have efficient access to the airport, and connect returning travellers and overseas visitors to the rest of the UK. Our surface access connections also allow us to attract staff from across the region to the employment and training opportunities available at the airport.

4.4.4 We expect to be held to our commitment to promote sustainable travel for our passengers and staff, and we will work with our partners and service providers to deliver safe and efficient access 24 hours a day, seven days a week. The ASAS has a direct relationship with this draft master plan, our Decade of Change sustainability strategy and our Capital Investment Programme.

4.4.5 Rather than repeat the full ASAS here, we instead summarise the ASAS Objectives and Targets below and invite readers to explore the full strategy document which can be found at gatwickairport.com/surfaceaccess.

4.4.6 As the focus of the current ASAS is the next five years, it does not cater for the standby runway scenario described in Chapter 5 – although the objectives of the ASAS could also apply to this scenario. Should a DCO application for the standby runway scheme be brought forward, it would be supported by a Transport Assessment addressing the specific surface access requirements of the project, including how GAL would continue to support sustainable travel choices.

4.4.7 The main surface access features at Gatwick are shown in **Plan 13.**

Vision

4.4.8 Whilst we recognise that we can only influence certain aspects of our surface transport links we are committed to ensure the quality and efficiency of access does not compromise the safe operation of the airport or the transport and environmental impacts on our neighbours. Our surface access vision is:

To provide safe and sustainable access for all airport users, without compromising quality or choice, and to provide for growth while supporting the needs of our local communities, economy and environment.

4.4.9 The responsibility for delivering this vision lies with our Surface Transport Team, supported by the wider airport community and endorsed by the Executive Management Board. The progress against the ASAS targets and Action Plan will be monitored by our Transport Forum Steering Group, which meets quarterly.

4.4.10 Achieving this vision will be a constant and evolving challenge, requiring the participation and support of a wide range of partners. In order to measure progress and ensure this ASAS is consistent with our vision we have identified a number of key objectives that will guide our activities over the next five years.

Objectives

4.4.11 We work with a wide range of stakeholders and business partners to achieve a co-ordinated approach against shared objectives. The main consultative group is the Gatwick Area Transport Forum consisting of GAL, local authorities, transport providers and agencies, business, airlines and other interested parties. Our new ASAS is objective-led so that we can be transparent in measuring our performance and be held to account by our Transport Forum and stakeholders.

4.4.12 We will continue to meet the objectives set in our 2012 ASAS, which focus on being well connected, accessible, sustainable and innovative. However our rapid growth means that we will also need to be very focused on achieving a high level of passenger experience, at the same time as managing considerable change, especially to road and rail access in the next few years. With this in mind we have developed the following objectives in consultation with our Transport Forum Steering Group:

OBJECTIVES

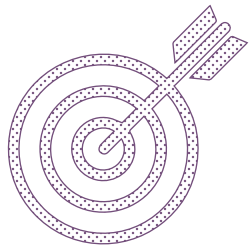
1. Continue to innovate as the best connected and most accessible UK airport, delivering integrated surface transport and sustainable growth by meeting customers' needs.

3. Collaborate with key stakeholders and communities in the region to maximise the economic potential from efficient road and rail access to Gatwick.

2. Manage the transition to enhanced rail and road provision, securing safe, efficient and reliable journeys for all users of the transport network, with effective communication.

4. Deliver a new standard in sustainable surface access in support of Gatwick's Decade of Change, using technology to achieve greater choice and efficiency.

4.4.13 These objectives give us high level, over-arching criteria against which to assess our projects and plans. We will also use these objectives to articulate our surface transport "contract" with staff/passengers/suppliers. To help with measuring how we are achieving our objectives we need a series of targets and a corresponding action plan. We have set out to make our targets challenging but realistic and achievable. We will strive to exceed our targets where possible. These will also contribute to meeting our statutory Section 106 obligations and Decade of Change targets.



Targets

4.4.14 Our main targets relate to mode share change, which supports the Government's objective to promote sustainable travel. Over the last two decades Gatwick has successfully grown its public transport mode share and supported sustainable staff travel through a variety of projects and initiatives. We currently sustain a public transport mode share for passengers of 44%, the great majority of which (39%) is by rail. This ASAS sets out specific targets for reductions in car journeys, which have the greatest environmental impact. We have also reflected the views of the Transport Forum Steering Group regarding stakeholder relationships and joint working initiatives.

Action Plan

4.4.15 Our targets are challenging but achievable, in many cases requiring continued close working with, and the support of our surface transport service providers and partners. Reflecting Gatwick's commitment to meet these targets, we have developed a series of actions which may be added to over the course of the ASAS, in consultation and agreement with the Transport Forum Steering Group. Each action is designed to contribute to the successful delivery of one or more of our ASAS Targets. The actions are listed in the ASAS.

4.4.16 We are starting from a strong base, with one of the highest public transport mode shares of any UK airport, and strong road and rail links serving the region. Capacity on rail services to and from Gatwick has more than doubled in the last five years, providing adequate capacity for us to increase rail mode share as we grow. The addition of a seventh platform at Gatwick Railway Station in 2014 and a project to almost double the size of the station concourse, which is due to start construction in 2019, will ensure there are no constraints to growth in rail demand over this master plan period. The station project has been designed to serve peak rail passenger flows up to 2036.

TARGETS

1. Achieve 48% public transport mode share for airport passengers by 2022 under the scrutiny of the Transport Forum Steering Group.
2. Demonstrate clear progress towards reaching a rail mode share aspiration of 45% by 2030, by achieving a rail mode share of over 40% by 2019 and sustaining at least this level to 2022.
3. Achieve 42% 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 45% including other sustainable travel initiatives (car share and zero emission vehicles) by 2022.

4. Deliver a reduction in air passenger "Kiss and Fly" car journeys equivalent to at least 10% of its 2017 mode share by 2022, and a reduction in single occupancy car journeys by staff of at least 10% of its 2017 mode share.
5. Reduce the ratio of staff to parking spaces in line with a shift to more sustainable modes of at least 5% by 2022 and achieve 5% of staff car journeys by registered car share users.
6. Achieve in excess of a 5% year on year increase in bus use by staff and passengers, and demonstrate measurable value for money from Passenger Transport Levy funding.
7. Deliver continuous improvement across the full range of Quality Service Monitor metrics, maintaining a level above 4.0 with measurable scores for bus/coach, taxi and car rental.

4.4.17 Highways England's M23 Smart Motorway project, already on site and due to be completed in Spring 2020, adds approximately 30% capacity to the strategic network serving Gatwick, and we have allocated funding in our Capital Investment Programme to improve our main access junctions to adequately cater for predicted growth over the next decade. The proposed improvements have been modelled using future road traffic forecasts up to 2028, ensuring there is sufficient capacity for both airport and non-airport vehicles without incurring significant delay.

4.4.18 Our ASAS Action Plan builds on these major infrastructure improvements through measures that offer choice and improve efficiency, working with our partners to prioritise sustainable modes and low or zero emission travel to and from the airport. While the improvements to road and rail infrastructure are being constructed, our Action Plan seeks to ensure accessibility is maintained and surface access continues to be a positive factor for choosing Gatwick and not a barrier to travel.

4.4.19 The following sections describe the specific surface access improvements we anticipate over the next five years. Further improvements that may be required in the longer term are addressed in Chapter 5.

RAIL IMPROVEMENTS

4.4.20 Gatwick is the UK's best connected airport by rail, with direct connections to over 120 different stations across the South East and beyond, and many times this number with a single interchange. Like the airport, Gatwick's railway station is open 24 hours a day.

4.4.21 Since the last master plan and ASAS, a new platform has been constructed at Gatwick Airport station providing more capacity and operational flexibility. Although considerable disruption has taken place over the last three years, as a result of Thameslink engineering works, industrial disputes and the introduction of the new Thameslink timetable, significant service improvements are being delivered in 2018 as the benefits of the Thameslink Programme are realised. This transformation of services, resulting in a train every three minutes between Gatwick and London, new rolling stock and a major overall uplift in capacity, is being delivered by the DfT, Network Rail and train operators. By the end of 2018 train services between Gatwick and London will be boosted to nearly 14,000 seats per hour, with room for nearly 30,000 passengers per hour overall. These improvements will emphasise Gatwick's role as a regional transport interchange hub at the centre of a wide, connected network, generating pivotal economic value.

4.4.22 Our unparalleled frequency and coverage of rail services, along with the direct connection between the mainline station and South Terminal, delivers a higher rail mode share and more rail passengers than any other UK airport, with capacity for this to grow. The latest statistics from the Office for Rail and Road indicate 19.4m passenger journeys using Gatwick Airport station in 2016/17, making it the busiest station in the South East outside London. Train capacity serving Gatwick has more than doubled compared to 2014, with new rolling stock on most of the services calling at the airport. This provides sufficient overall capacity for us to continue to grow our rail mode share over the next decade.

Access to London

4.4.23 Services from Gatwick run direct to seven main London terminals and interchange stations, including London Victoria, London Bridge, Kings Cross St Pancras and Farringdon, for interchange with the new Elizabeth Line (Crossrail). From 2018 there will be a train to Central London every three minutes, reaching London Bridge and London Victoria in under 30 minutes and crossing the city in under 50 minutes.

4.4.24 London Victoria services include the premium Gatwick Express, which is designed to serve the particular needs of air passengers. Gatwick Express currently carries around 50% of all rail journeys between Gatwick and the Capital. Gatwick Express is operated using trains specifically designed for airport-users, which are all under two years old.

Access to the wider region

4.4.25 Whilst the Brighton Main Line supports high frequency services between the coast and the capital, Gatwick's rail connectivity extends much further. There are direct services as far west as Reading, Southampton and Portsmouth, and as far north as Bedford. From the end of 2018 there will also be half-hourly direct services to both Peterborough and Cambridge.

4.4.26 The GWR service between Gatwick and Reading, via Redhill and Guildford, is currently hourly but there is a franchise commitment to double this to half-hourly. In the longer term we have an aspiration, shared by GWR, to go further, taking advantage of the remodelling at Reading station, to extend direct services to Oxford or beyond.

4.4.27 Improvements to the Brighton Main Line are critical for the region. The upgrade programme includes removing bottlenecks around the Croydon area and will help deliver the full benefits of the Thameslink Programme, due for completion in 2018. Gatwick is supporting the Coast to Capital LEP, and stakeholders along the corridor, to lobby Government for these improvements at the earliest opportunity.

ROAD IMPROVEMENTS

The Gatwick road network

4.4.28 As the UK's second busiest airport, Gatwick relies on its excellent road and rail links to get passengers and staff efficiently to and from the airport. Our local road network and access to the M23 motorway are critical elements to the successful and safe operation of the airport. On an average summer day, approximately 47,000 vehicles enter the airport via its two main road access points; the South Terminal and North Terminal roundabouts.

4.4.29 GAL is the traffic authority for approximately 27 miles of internal road network, which distributes traffic to and from the forecourts, car parks and on-airport hotels. It also includes access for operational vehicles, transport operators, supplies and emergency services. We follow UK regulations, guidance and good practice for safe operations, and have a team on site 24 hours a day responding to incidents and keeping our roads clear.

4.4.30 We work closely with our neighbouring highway authorities, West Sussex County Council, Surrey County Council and Highways England, as well as Crawley Borough Council as the planning authority, to manage and maintain our roads and deal with any planned or unplanned disruption. Gatwick shares operational information with these key stakeholders and receives information that we can pass on to our staff and passengers in a timely manner when there is the potential for travel disruption.

Future demand for road travel

4.4.31 Despite approximately 30% growth in annual airport demand since 2012, road traffic associated with Gatwick's operation has increased by less than 15%. This has been achieved by promoting sustainable alternatives, and discouraging those trips with a disproportionate impact –"kiss and fly" trips that involve two return journeys by car (to drop off and pick up). Over the next ten years we estimate that daily road traffic will increase by no more than 1% per year. This means that the increase in capacity on the M23 will be sufficient to serve the airport and the surrounding region until at least the late 2030s.

4.4.32 Additionally, a higher percentage of future car journeys will be made by zero or low emission vehicles as a direct result of initiatives led by Gatwick. An agreement with our on-airport taxi provider will see them convert 100% of their fleet to fully electric or hybrid vehicles by 2020. We have also introduced an all-electric car hire scheme, a first for a UK airport, in partnership with BlueCity and we are supporting discussions with others to establish a wider, regional network of charging points..

4.4.33 Since 2012 we have completely updated our local road traffic modelling capability. New data has been incorporated to provide a robust and accurate model suitable for capacity planning and business case preparation. We have used the model to test the road network and based on these assessments, we are currently considering a range of improvements at North Terminal Roundabout, South Terminal

Roundabout and Longbridge Roundabout. The principles of the improvements are as follows:

- Signalisation of North Terminal and South Terminal roundabouts with vehicle actuated signal control with queue detection
- Increase in circulating capacity at North Terminal Roundabout
- Widening on approaches and exit lanes from roundabouts to increase capacity
- Revisions to lane marking and signs
- Dedicated "free-flow" lanes for individual movements where required

4.4.34 We are in the process of discussing these measures with Highways England, West Sussex County Council and Surrey County Council to develop the detailed design and programme for implementation. The capacity that these road improvements deliver is sufficient to cater for forecast airport and non-airport demand based on airport growth and DfT national traffic models.

M23 smart motorway scheme

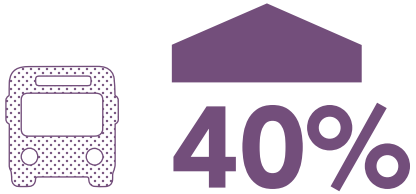
4.4.35 As part of Highways England's Road Investment Strategy, works to provide a fourth lane on the M23 between the M25 (M23 Junction 8) and Crawley (M23 Junction 10) have begun. The scheme will deliver an important boost to capacity, ensure reliable journey times, and benefit the whole region. Gatwick is working with Highways England and West Sussex County Council to determine the optimum approach to integrating works to North Terminal and South Terminal roundabouts with the M23 Smart Motorway project.

OTHER INFRASTRUCTURE

Bus and coach

4.4.36 To improve the customer experience at the airport, we have completed a new waiting area at South Terminal for bus and coach passengers. We are currently developing a project to increase the capacity of our bus and coach facilities on Furlong Way at the North Terminal by up to 40%. This will allow us to support future demand and increased services.

4.4.37 Our sustainable travel choices for staff include the extensive, 24 hour, local bus network around Gatwick provided by Metrobus. 2017 saw the introduction of another service stopping at both terminals, and the extension of other routes to serve the airport directly. These improve accessibility and reduce journey times for staff and passengers from the Crawley, Horley and Horsham areas. Gatwick will continue to invest to extend and improve local services using its Passenger Transport Levy to provide sustainable travel choices, especially in the evening, early morning and at weekends.



40%

BUS AND COACH FACILITIES

24hrs

LOCAL BUS NETWORK AROUND GATWICK PROVIDED BY METROBUS

Cycling and pedestrian access

4.4.38 There is a designated cycling and walking route serving Gatwick, Crawley and Horley, forming part of National Cycling Route 21 (London to Brighton), which offers a safe and sustainable travel option, particularly for airport-based staff. By replacing and enhancing the facilities we provide at each terminal we are starting to reverse a decline in staff cycling in recent years. Measures include secure cycle storage, located where it is most needed, and lockers, changing rooms and showers accessible at each workplace. We are delighted that there has been a very rapid uptake of these new facilities.

Car parking

4.4.39 Gatwick's approach to parking is closely linked to our Section 106 agreement with West Sussex County Council and Crawley Borough Council in regard to accommodating future demand growth on-airport while seeking to achieve mode share targets. Gatwick has increased the supply of parking spaces in recent years, in line with demand, and will continue to do so.

4.4.40 In summer 2010 there were 32,640 public spaces available on airport. By summer 2017, this had risen to 39,000, a growth rate of 19.5%.

4.4.41 Gatwick is intending to bring forward a number of projects to deliver increased on-airport parking capacity over the next five years. These are:

- 3,000 delivered by the new MSCP 7 at North Terminal.
- 3,500 spaces delivered by consolidation of our long-stay self-park product into one site and optimising the configuration of current storage areas.
- 1,500 spaces delivered by the new MSCP 4 at South Terminal.

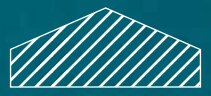
4.4.42 In combination, these projects, together with the 1,565 spaces referred to in Section 2.4 above, deliver 9,565 extra spaces throughout the period, or an increase of 24.5% from 2017 capacity. This investment will ensure that enough parking is provided at the airport to meet the forecast increase in demand that is expected as passenger numbers grow, allowing for any changes in mode share.

4.4.43 We will keep our car park plans under review as we monitor how emerging trends in car ownership, car usage and the application of new vehicle technologies, affect the long term demand for parking at the airport.

9,565
EXTRA CAR PARKING SPACES

AN INCREASE OF

24.5%



FROM 2017 CAPACITY

50% CARBON EMISSIONS REDUCTION

from our buildings and ground vehicles since 2010

4.5 SUSTAINABILITY PERFORMANCE

DECADE OF CHANGE STRATEGY

4.5.1 We launched our 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 at gatwickairport.com/sustainabilityreport.

4.5.2 This strategy, which contains ambitious performance goals, will continue to guide the way we operate and develop the airport over the remainder of the current decade. We expect a new strategy, with updated performance goals, to be established by 2020 to continue this work into the next decade.

4.5.3 Gatwick's growth has been significantly higher than was predicted in 2010 when the Decade of Change performance goals were set. In 2010 we expected to reach approximately 40mppa by 2020 whereas now we expect to reach approximately 50mppa. Yet, despite this higher growth rate, our sustainability strategy has enabled us to reduce Gatwick's overall environment footprint substantially since 2010 and we expect to meet our Decade of Change goals for 2020.

4.5.4 Examples of this reduced footprint are that, since 2010, carbon emissions from our buildings and ground vehicles have reduced by 50%, potable water consumption by 25% and energy consumption by 12%. The airport is presently recycling or reusing 58% of operational waste, and has sent zero waste to landfill since 2015. Gatwick has become the first airport to hold both the Airport Carbon Accreditation at "Neutral" level (level 3+) and the Carbon Trust's Zero Waste to Landfill standard.

COMMUNITY

4.5.5 Our Decade of Change goal for Community is to share the benefits of Gatwick's growth, contributing to the social, environmental and educational development of our community.

4.5.6 Our strategies for delivering against this target are explained in Chapter 8. These have resulted in an increased level of community engagement in recent years, a level which we will maintain. Examples of our community engagement in 2017 include our sponsorship of 40 local events, provision of financial support to 173 local causes, broadcasting our 'Learn Live' programmes, viewed by 20,000 students, and hosting 'Discover Gatwick' tours for local and town councils and neighbourhood groups.

4.5.7 We will continue to prioritise engagement with communities, to keep them informed about what we are doing and listen to their concerns and ideas for improvements. We will also seek to develop long-term relationships and partnerships with business groups which can deliver lasting benefits across the region.

ECONOMY

4.5.8 Our Decade of Change goal for the Economy is to develop and fulfil our role as an economic driver of local, regional and national significance.

4.5.9 Our strategies for delivering against this target are explained in Chapter 7. Examples of our work in this area include research and stakeholder engagement on Gatwick's role in the national, regional and local economy. We have also sponsored local business events and launched a new jobs portal. In 2017 we spent £132.8m with local and regional suppliers[9].

4.5.10 We will continue to seek opportunities for collaborating with local businesses, provide training and apprenticeship programmes and promote awareness of job opportunities at the airport.

CARBON

4.5.11 Airports can play a significant role in supporting the UK's transition to a low carbon economy, by reducing or eliminating their direct greenhouse gas emissions, and by influencing indirect emissions related to airport operations - in particular from aircraft in take-off and landing stages.

4.5.12 Direct and indirect airport emissions are divided into three source categories in line with the Greenhouse Gas Protocol:

- **Scope 1.** Direct emissions from sources which we own or control (e.g. the use of fuel and gas at the airport).
- **Scope 2.** Indirect emissions from the generation of electricity which we purchase and use at Gatwick.
- **Scope 3.** Other indirect emissions at the airport, e.g. aircraft landing and taking off, third party tenants' energy and fuel use, passenger surface access and staff commuting.

4.5.13 Our Decade of Change goals for carbon are:

- to reduce our carbon emissions by 50% against a 1990 baseline (Scope 1 and 2 emissions) by 2020.
- to source 25% of our energy from renewable sources.

4.5.14 The carbon emissions produced by Gatwick in 2017, and for comparison, in 2010, are shown in Figure 4.3. The largest component is the Landing and Take-off (LTO) cycle which measures carbon produced by aircraft approaching or departing the airport, below an altitude of 3,000ft.

4.5.15 Despite the growth in passenger numbers at the airport, Scope 1 and 2 emissions are already 42% lower than our 1990 baseline as a result of fuel saving initiatives and the purchase of 100% renewable electricity since 2013/14. Therefore we are making good progress to meeting our Decade of Change target. We will continue our carbon reduction strategies which are outlined in Chapter 6 and, as a result, expect Scope 1 and 2 emissions to continue declining over the next five years.

4.5.16 Figure 4.3 shows that emissions associated with aircraft operations and surface access trips to and from the airport account for a very large part of the total Scope 3 emissions. While these have increased since 2010 Gatwick's total carbon per passenger, including Scope 3, has reduced from 23kg per passenger in 2010 to 16kg per passenger in 2017 which indicates the improvements in carbon efficiency that have been made.

IN 2017

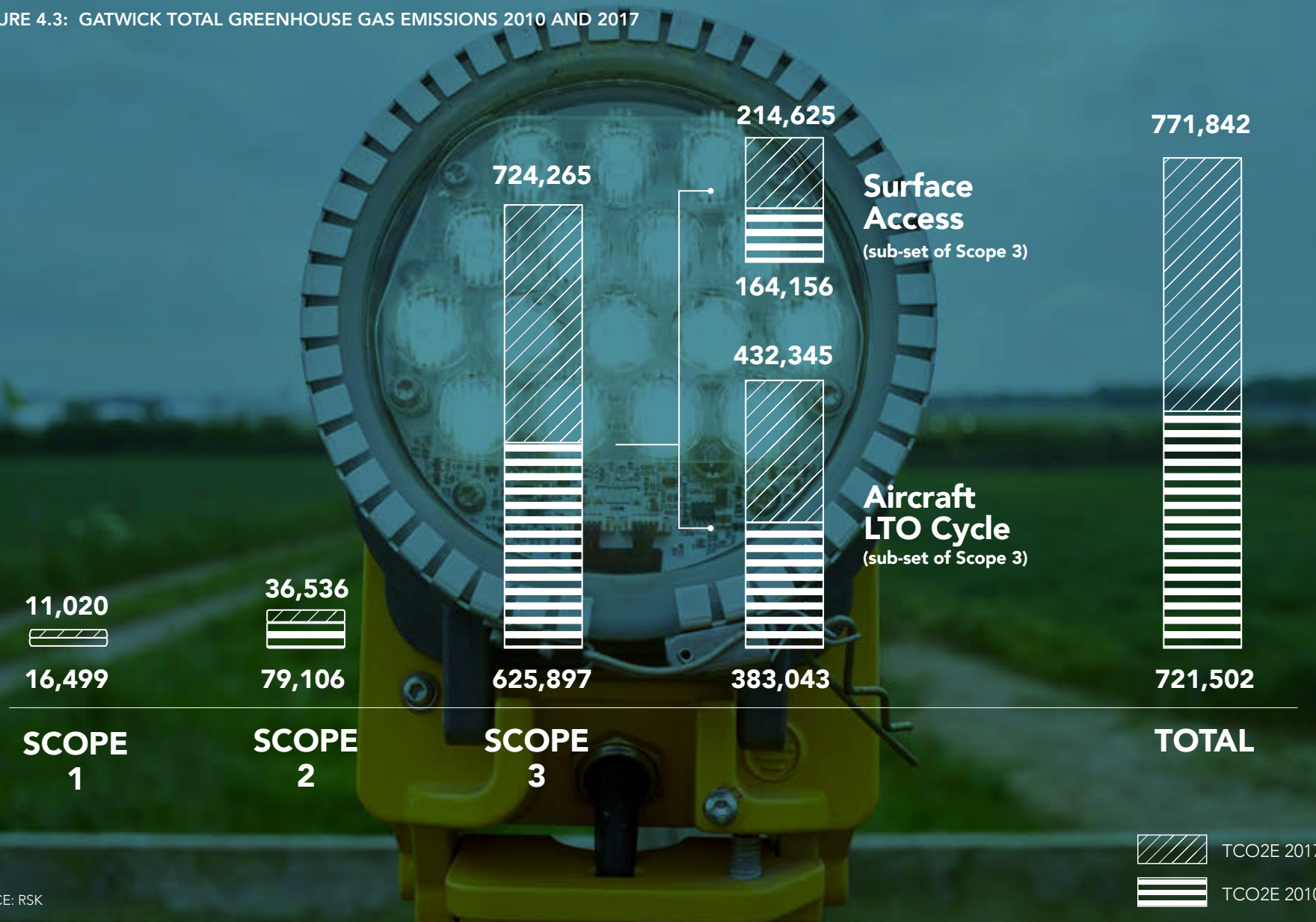
GATWICK AIRPORT LIMITED SPENT

£132.8m

WITH LOCAL AND REGIONAL SUPPLIERS

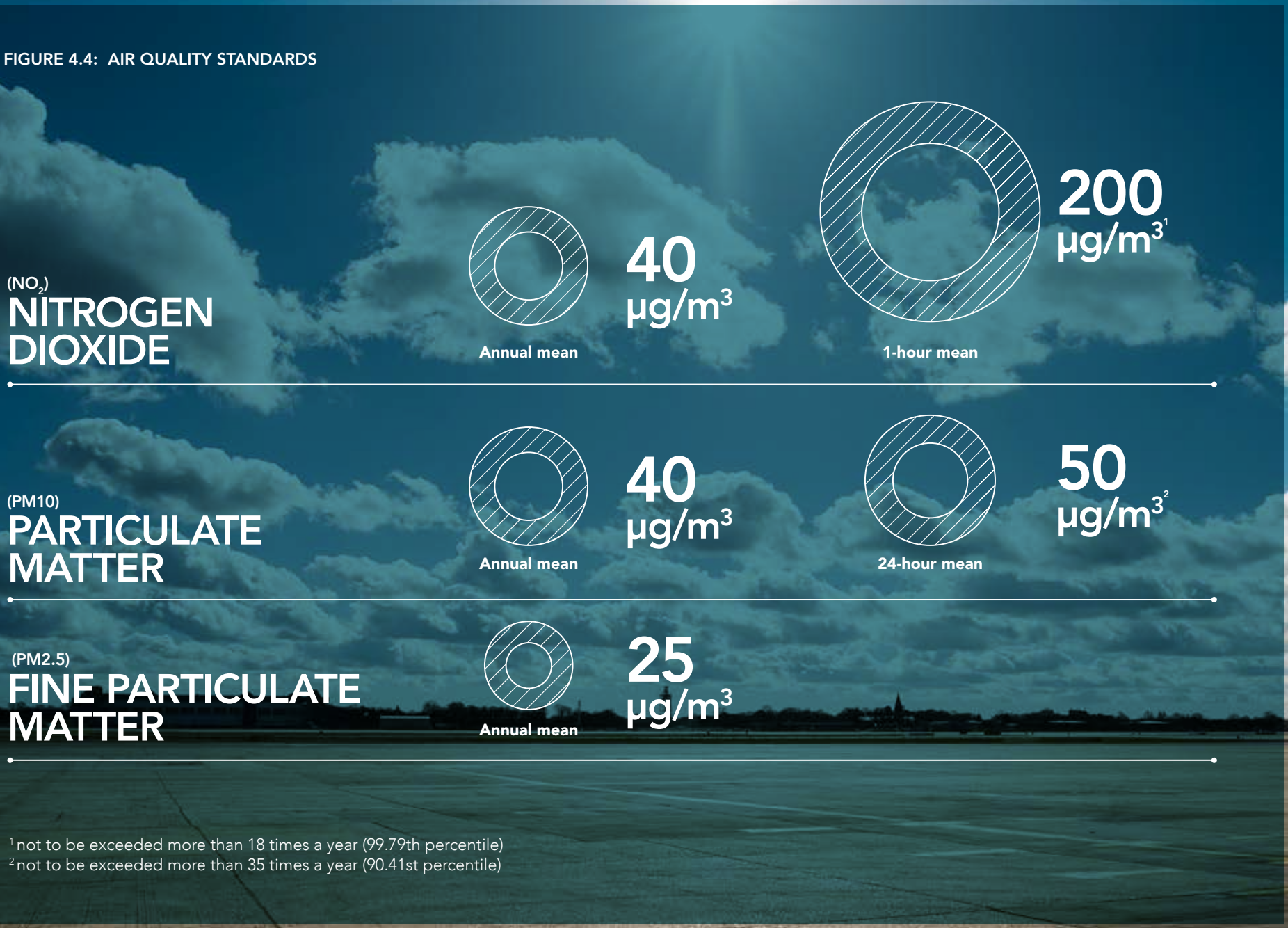
[9] *BN, CR, GU, KT, RH and TN postcodes*

FIGURE 4.3: GATWICK TOTAL GREENHOUSE GAS EMISSIONS 2010 AND 2017



SOURCE: RSK

FIGURE 4.4: AIR QUALITY STANDARDS



[1] not to be exceeded more than 18 times a year (99.79th percentile)
[2] not to be exceeded more than 35 times a year (90.41st percentile)

AIR QUALITY

4.5.17 Our Decade of Change goal for Air Quality is to reduce air quality impacts using new technology, processes and systems.

4.5.18 The most relevant EU air quality standards[10] for pollutants are shown in Figure 4.4. These show the maximum permissible annual mean concentrations of Nitrogen Dioxide (NO_2) and particulates (PM10 and PM2.5).

4.5.19 2017 data from Gatwick's real-time automatic monitoring station (LGW3) and four other permanent monitoring stations in close proximity to the airport (RG1, RG2, RG3 and CA1) show all applicable air quality objectives for Nitrogen Dioxide (NO_2) continue to be met both on and off airport (See Figure 4.5) and that current trends in concentrations show continuing improvements. Concentrations of fine particles and other pollutants also continue to be well below nationally set objectives.

4.5.20 As is the case in many UK towns and cities, localised air quality hotspots are sometimes identified where the 40 µg/m^3 maximum permissible annual mean concentration for NO_2 is exceeded. Two examples of this have been identified in the local area; at Hazelwick roundabout in Crawley and on the A23 Brighton Road in Horley. In the case of the former, monitoring shows that emissions from road traffic sources are still exceeding the air quality objectives for NO_2 along Crawley Avenue (A2011), which is the main route between the M23, the town centre and the Manor Royal business district. We are working with Crawley Borough Council to expand sustainable travel modes for the area, including rail, low emission buses and electric vehicle infrastructure. In the case of the latter, additional monitoring close to the junction of Massetts Road and the A23 in Horley recorded an annual average NO_2 concentration of 46 µg/m^3 in 2017. This is confined to a few residential properties near the road junction. Modelling indicates that, at this location, 22.9% of the NO_2 pollution is attributable to the airport's operation including associated road traffic. Reigate and Banstead Borough Council and Gatwick agree that this site needs further attention and potential mitigation measures are currently being explored and implemented with other partners.

FIGURE 4.5: CONCENTRATIONS OF NO_2 (ANNUAL AVERAGE MG/M^3) AT AUTOMATED MONITORING STATIONS AROUND GATWICK

SITE	NO_2 CONCENTRATIONS (MG/M^3)									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
RG1 Horley	26.9	25.3	28.9	21.1	22.7	21.7	20.2	21.1	20.3	20.4
RG2 Horley South	32.4	31.3	31.2	28.8	31.2	28.5	28.5	26.4	28.6	26.7[1]
RG3 Poles Lane	18.9	18.2	20.5	17.8	23.2	19.3	17.5	14.0	16.7	13.9
CA2 Gatwick East	30	29	38[2]	(28)[2]	28	31	(26)[2]	22	29	29
LGW3 Gatwick Airport	34.8	34.3	36.8	32.3	33.4	32.0	30.6	28.2	29.8	29.5

[1] RG2 site relocated 44m in 2017 (to become RG6) so data not directly comparable
[2] Analyser failure – adjusted value in brackets taken from tri-located tubes
SOURCE: CA2 FROM 2017 AIR QUALITY ANNUAL STATUS REPORT, CRAWLEY BOROUGH COUNCIL, THE REMAINDER FROM AIR QUALITY MONITORING: JOINT REPORT BY RBBC AND GAL FOR 2017.

[10] *Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management*

4.5.21 We will continue to work with the local councils to monitor local air quality conditions and, through the strategies referred to in Chapter 6, and play our part in continuing to improve local air quality over time.

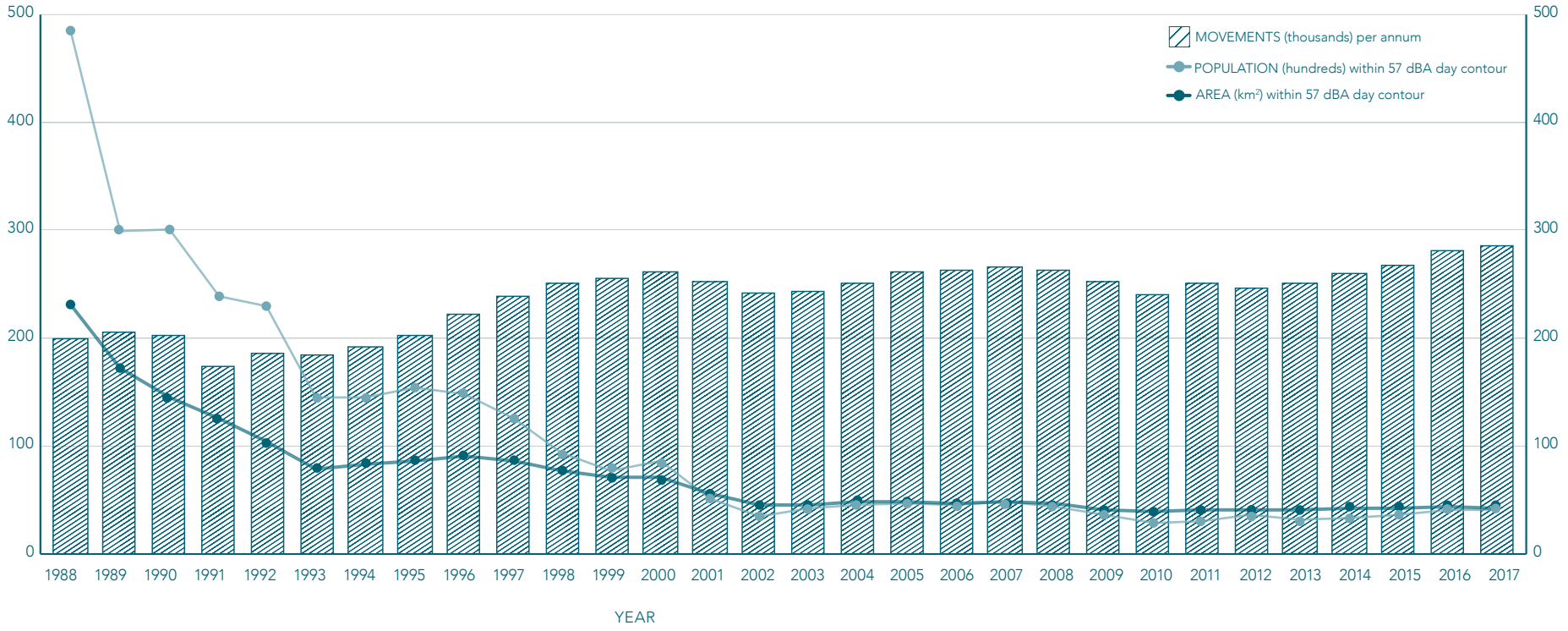
NOISE

4.5.22 Our Decade of Change goal for Noise is to reduce the impact of operational noise and;

- Implement Gatwick's European Noise Directive (END) Noise Action Plan
- Maintain Gatwick's position as 'best practice' for noise management
- Work with airlines and partners to reduce noise impacts on Gatwick's campus

4.5.23 Our current Noise Action Plan was formally approved by Government in 2013 and provides a comprehensive description of our noise management strategies. We have recently updated this with a new draft plan which is in the final stages of adoption.

FIGURE 4.6: GATWICK ANNUAL TRAFFIC AND SUMMER DAY NOISE CONTOUR TRENDS



SOURCE: CAA ERCD

4.5.24 In recent years we have seen a substantially increased level of engagement with local communities and industry stakeholders on management of air noise. This is explained in detail in Chapter 6, along with our strategies for reducing noise impacts.

4.5.25 Gatwick's noise footprint reduced sharply from the late 1980s to the early 2000s as shown in Figure 4.6. This resulted from the introduction of significantly quieter aircraft. Since then the overall trend has been for a gradual reduction in contour area despite an increase in annual aircraft movements, although both have fluctuated over this period.

4.5.26 The 'slowing down' of noise improvements since the early 2000s is partly because the noise footprint is now a fraction of what it was 30 years ago (the population in the 57dB contour is now less than 10% what it was in 1988) and partly because the oldest, noisiest aircraft have been removed from operations. However, we believe that we will see a continuation of the downward trend in noise footprint in the coming years, with the introduction of new quieter aircraft. For example, the 'A320 neo' and 'B737 Max' aircraft which are now entering service are about 4dB quieter on departure and 2dB quieter on approach compared to previous equivalent aircraft.

4.5.27 The most recent 2017 noise contours show a small reduction in size compared to the 2016 contours, despite a higher number of movements - again indicating the continuing benefit of quieter aircraft.

4.5.28 We have explored this trend further by commissioning air noise contours for 2022. The results from the 2022 noise contour modelling are compared with the 2017 contours in Figures 4.7 and 4.8. The 2022 noise footprint, in terms of population within the contours, is expected to be smaller than in 2017. Again this overall decrease results from the shift to quieter aircraft off-setting the increase in movements. There are some small changes in the shape of the contours which affect the populations recorded. This explains why the population in the 57dB summer day contour is predicted to increase by 200 people although its area is actually smaller than in 2017.

4.5.29 The summer day and summer night noise contours for 2017 are shown in **Plan 14** and **Plan 15** and the projected summer day and summer night noise contours for 2022 are shown in **Plan 16** and **Plan 17.**

FIGURE 4.7: SUMMER DAY NOISE EXPOSURE CHANGE FROM 2017 TO 2022

NOISE METRIC	POPULATION	
	2017 (Standard)	2022 Single main runway
Leq summer day 54dB	10,950	10,500
Leq summer day 57dB	3,400	3,600
Leq summer day 60dB	1,500	1,400
Leq summer day 63dB	550	500
Leq summer day 66dB	350	300
Leq summer day 69dB	150	100
Leq summer day 72dB	150	0

SOURCE: CAA ERCD

FIGURE 4.8: SUMMER NIGHT NOISE EXPOSURE CHANGE FROM 2017 TO 2022

NOISE METRIC	POPULATION	
	2017 (10 year average)	2022 Single main runway
Leq summer night 48dB	13,550	11,400
Leq summer night 51dB	6,650	5,200
Leq summer night 54dB	1,800	1,400
Leq summer night 57dB	750	500
Leq summer night 60dB	350	300
Leq summer night 63dB	200	200
Leq summer night 66dB	150	0
Leq summer night 69dB	0	0
Leq summer night 72dB	0	0

SOURCE: CAA ERCD

TRANSPORT

4.5.30 Our Decade of Change goals for ground Transport are:

- to achieve 40% public transport mode share for air passengers and staff by the time the airport reaches 40 million passengers per annum.
- Identify feasible measures to achieve a stretch target of 45% public transport mode share once the 40% target at 40mppa has been achieved.

4.5.31 Our strategies for promoting the use of public transport are captured in our Airport Surface Access Strategy (ASAS) which is described above. This shows that Gatwick's current public transport mode share for passengers is 44%, and we are very close to meeting our Decade of Change stretch target. For this reason our ASAS sets a new target of increasing our public transport mode share for passengers to 48% by 2022 and we have strategies in place to deliver this.

ENERGY

4.5.32 Our Decade of Change goal for Energy is to achieve a 20% reduction in energy against a 1990 baseline by 2020.

4.5.33 We have a number of strategies for reducing energy usage which are explained in Chapter 6. These include the replacement of plant and electrical equipment with more energy efficient technology. For example in 2017 we completed phase 2 of the South Terminal boiler plant decentralisation programme and three large scale terminal lighting upgrade projects. Through initiatives such as these we have seen our energy use reduce by 12.8% from our 1990 baseline.

4.5.34 The rapid growth in passenger throughput in recent years has meant that there has been a slight increase in overall electricity and gas consumption since 2015. However, through our energy efficiency improvements, total energy use per passenger has fallen by 40% since 2010.

4.5.35 Through our energy efficiency strategies we expect this trend of falling electricity and gas consumption per passenger to continue.

WASTE

4.5.36 Our Decade of Change goal for Waste is to generate no untreated waste to landfill and achieve a 70% waste recycling rate by 2020.

4.5.37 Our recycling rates have increased significantly since 2015 and in 2017 had reached 58%. This has been assisted through initiatives such as our improved recycling facility and collaboration with other airport organisations to improve waste sortation at source. We expect to have met our 70% recycling target by 2020.

4.5.38 Gatwick is the first airport to achieve the Carbon Trust Standard for Zero Waste to Landfill. This independent certification recognises organisations that take a best practice approach to waste management and actively divert all appropriate waste streams from landfill. The certification applies to Gatwick's operational and commercial waste.

Gatwick is the first airport to achieve the Carbon Trust Standard for

ZERO WASTE TO LANDFILL

TOTAL WATER CONSUMPTION 2010 TO 2017

25% **REDUCTION**

WATER CONSUMPTION PER PASSENGER 2010 TO 2017

48% **REDUCTION**

WATER

4.5.39 Our Decade of Change goals for Water are:

- to continually improve the quality of water leaving the airport.
- to achieve a 20% reduction in water consumption against a 2010 baseline with a stretch target of 25%.

4.5.40 Through our initiatives such as enhanced leak detection and improved metering, our 2017 total water consumption was 25% lower than 2010 levels. Water consumption per passenger was around 16 litres compared with 31 litres in 2010. Through our water reduction strategies outlined in Chapter 6 we expect to see consumption per passenger to continue to fall over the coming years.

BIODIVERSITY

4.5.41 Our Decade of Change goal for Biodiversity is to have an award-winning approach to biodiversity through achieving a nationally recognised award for ecological awareness.

4.5.42 Our strategies for managing our green spaces are described in Chapter 6 and these have helped us achieve accreditation of the Wildlife Trusts' Biodiversity Benchmark for the last four years. In addition, we received the Client Award in the CIRIA BIG Biodiversity Challenge in September 2016 for our management of the green spaces around Gatwick, for using volunteers and the local communities. In 2017 over 400 hundred people joined the Gatwick Greenspace Partnership as volunteers, helping to manage and improve the quality of the green spaces around the airport. Looking ahead our strategies will be enhanced by the development of a new, five-year biodiversity action plan, on which work has begun.

5 GROWTH SCENARIOS

LOOKING 5 TO 15 YEARS AHEAD

5.1 INTRODUCTION

5.1.1 This chapter of the draft master plan looks ahead 5-15 years out to 2032. It considers three ways - used either separately or in combination - in which Gatwick could grow to meet the increasing demand for air travel:

1. one where it remains a single runway operation using the **existing main runway;**
2. one where the **existing standby runway** is routinely used together with the main runway, and;
3. one where we continue to **safeguard for an additional runway** to the south.

5.1.2 These scenarios are not exclusive choices. Gatwick could transition from one to another within the timeframes discussed in this draft master plan. For each of these growth scenarios, this chapter explains how the airport would operate, what level of traffic growth could be expected and the infrastructure improvements that might be required. It also provides information on potential key environmental and economic impacts.

5.2 MAKING BEST USE OF THE EXISTING MAIN RUNWAY

SCHEME DESCRIPTION

5.2.1 Under this growth scenario the airport would continue to have a single-runway operation, although the existing standby runway would be available for use when the main runway is temporarily closed. The overall layout of the airport would be largely unchanged and it would remain a two-terminal operation. However there would be some changes required to the infrastructure and these are highlighted below.

5.2.2 Beyond 2022, we expect to realise the full benefits of the planned improvements to air traffic management processes and technology described in Section 4.2. These will be introduced in a phased programme of works over the next few years. While there will be some immediate benefits, the full value of this programme should become apparent on its completion, expected in the early 2020s. Improvements will be seen in the predictability and resilience of the operation as well as increases in the peak capacity of the runway. This will enable us to extract the full potential of the existing main runway.

5.2.3 Because some of these initiatives are still at the development stages, there is uncertainty as to how quickly they can be introduced and the timing of any additional slot release that they make possible. If all the improvements deliver their expected potential, the scheduled runway movement rate could eventually increase from the current maximum of 55 movements per hour to around 60 movements per hour during peak periods.

TRAFFIC GROWTH

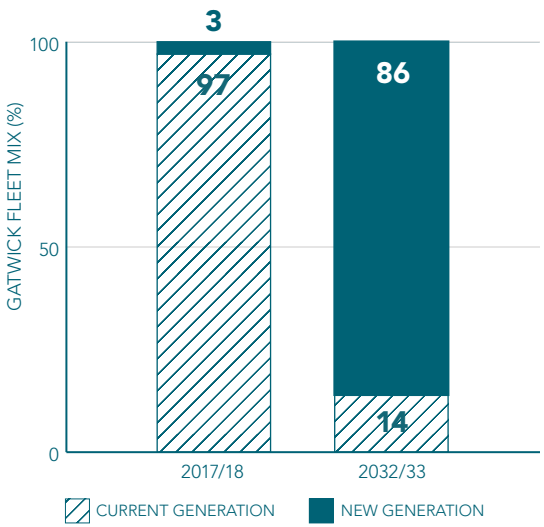
5.2.4 Figure 5.1 extends the traffic forecasts presented in the last chapter ahead for a further ten years to 2032. To reflect the uncertainty about the timing of additional peak runway capacity, a range is indicated, with the lower value representing peak scheduled flights maintained at the current level of 55 per hour, and the higher value representing growth to 60 per hour by the early 2030s.

FIGURE 5.1: GATWICK GROWTH WITH EXISTING MAIN RUNWAY

	2017/18 ACTUAL	2018/19	2019/20	2020/21	2021/22	2022/23	2027/28	2032/33
Passengers (m)	45.7	47.1	49.1	50.6	52.0	52.8	56 – 59	57 – 61
ATMs	280,790	284,270	289,770	294,490	297,670	300,000	315,000 – 325,000	315,000 – 340,000
Passengers per ATM	162.7	165.7	169.4	172.0	174.7	176.0	Around 180	Around 180

5.2.5 For the purposes of these forecasts it has been assumed that the planned third runway at Heathrow opens in 2030. The opening of this new runway is forecast to have a relatively minor negative impact on traffic at Gatwick for a few years. Therefore, if for whatever reason the third runway is delayed, the traffic at Gatwick in 2032 could be expected to be a little higher than indicated. The forecasts also assume that the levels of flying permitted by the DfT at Gatwick within the night quota period remain the same as today.

FIGURE 5.2: FORECAST CHANGES IN FLEET COMPOSITION



5.2.6 These forecasts for Gatwick reflect an increase in aircraft size but also an increasing number of 'new generation' aircraft which will have lower emissions and noise levels. Today just 3% of Gatwick's fleet are classified as new generation aircraft and this is expected to increase to 86% by 2032 as part of the normal airline process of aircraft replacement (see Figure 5.2).

5.2.7 Air cargo is forecast to continue growing strongly over this period, driven by the growth in long-haul services. Total tonnage is expected to increase from 102,000 tonnes today to around 220,000 tonnes by 2032/33..

Annual passengers will increase from

45.7M TODAY TO 57 – 61M BY 2032

Passengers per aircraft movement will increase from

163 TODAY TO AROUND 180 BY 2032

Cargo will increase from

102,000 TONNES TODAY TO AROUND 220,000 TONNES BY 2032

CAPITAL INVESTMENT

5.2.8 To support the growth of Gatwick making best use of the capacity of the existing main runway, with a throughput of around 60mppa, further investments will be required to ensure the infrastructure is adequate to meet our service standards and sustainability objectives. A significant element of this growth occurs through peak spreading, which means that the peak hour throughput will not grow at the same rate as annual passenger growth. We anticipate that the new infrastructure that will be required to accommodate this growth will be delivered through the standard Town and Country Planning Act processes, including the General Permitted Development Order and Environmental Impact Assessments processes where applicable.

5.2.9 The exact timing and scope of these investment projects will depend on how air traffic evolves over time. They will also be shaped by our ongoing consultation with airlines and other stakeholders and the design process for each project. The projects which are described next and illustrated in **Plan 18** are therefore indicative of the longer-term changes that we expect could take place by 2032, but are not definitive proposals.

Terminal improvements

5.2.10 The main processing elements of the terminals (e.g. check-in, security, baggage reclaim and border checks) are likely to require enhancements and we will continue to focus on technology and process improvements to achieve this. If increased floor space is necessary we will seek to provide this by reconfiguring existing terminal areas to use them more efficiently. If this is impractical then we will consider some form of terminal expansion.

5.2.11 One area that may require specific attention at the upper end of the forecast growth range is pier service levels, especially for long-haul passengers. We are in the early stages of investigating ways of adding long-haul gates, should these prove necessary. Three location options are shown in **Plan 18**. One option would add pier capacity to South Terminal through a western extension of Pier 3. The other two options are for remote piers in the western apron which would serve North Terminal. These remote piers would be accessed by a transfer bus service.

Operational Efficiency and Resilience

5.2.12 The runway and airfield technology and process improvements we plan to implement through our five year CIP will continue into this time period. Many of these will be associated with new IT systems, equipment and software to provide greater operational precision and predictability. They include the introduction of:

- GMAN – a new system that allocates aircraft parking stands dynamically at about 75 minutes from aircraft touchdown, as opposed to the current system of pre-allocation based on the schedule. This will enable the airport to increase operational stability and optimise stand utilisation.
- Automated Clearance Management – a new system that automatically provides departure clearance to aircraft flight decks. This will reduce flight deck and ATC workload.

5.2.13 We continually monitor and evaluate emerging process and technology developments that we believe could potentially offer operational improvements at Gatwick. We remain committed to implementing the SESAR[11] PCP (Pilot Common Project) requirements (such as enhanced information sharing between Gatwick and Eurocontrol) and are closely following developments of the SESAR 2020 Common Project requirements as they become defined.

[11] *Single European Sky ATM Research - a collaborative public-private partnership project to overhaul European airspace and its management.*

FIGURE 5.3: KEY PROJECTS 2022 TO 2032 (EXISTING MAIN RUNWAY)

	PROJECTS	PRIMARY PURPOSE
TERMINAL	Check-in and bag drop	Service Quality
	Security search	Service Quality
	Baggage reclaim	Service Quality
	Borders	Service Quality
	Additional pier-served gates	Service Quality
OPERATIONAL EFFICIENCY AND RESILIENCE	ATC technology and process improvements	Resilience and Capacity
SURFACE ACCESS	Forecourt management initiatives	Resilience and Service Quality
	Bus and coach facilities	Service Quality
	Car Parking	Capacity
COMMERCIAL	Additional offices and hotels	Commercial revenue
	New hangar	Commercial revenue

Surface Access

5.2.14 Although the focus of our ASAS is the next five years, we have reviewed the action plans to allow for continued growth beyond this period. We have considered what further infrastructure improvements might be needed to support the airport's growth to around 60mppa, although further work will be needed to firm up these plans. Additional actions and measures may be developed and put in place to support expansion.

5.2.15 Our road modelling suggests that, with the improvements to North and South Terminal roundabouts planned for the next five years, and with the M23 Smart Motorway improvements underway, the local road network will be able to accommodate growth to around 60mppa without significant deterioration in performance. This allows for both airport and non-airport traffic growth but assumes that Gatwick will continue to be successful in reducing car trips to and from the airport in accordance with our ASAS objectives. Similarly the much improved rail station will be able to accommodate demand over this time period, even allowing for an increase in rail mode share to around 45%.

5.2.16 In terms of on-airport roads, we will explore further forecourt management initiatives for both terminals to improve the efficiency of the operation and the utilisation of the forecourts. While we want to provide direct vehicle access to the terminals for those who need it, we also need to consider how we can encourage airport users to choose sustainable transport modes and give appropriate priority to these.

5.2.17 It is possible that additional bus and coach station capacity may be required beyond the additional spaces planned in the current CIP, at either or both Terminals. The latest ASAS includes an action to establish the medium term need for bus and coach capacity such that any provision can be allowed for in future capital investment plans.

Car Parking

5.2.18 Additional car parking, or parking required to replace existing spaces lost owing to other developments, can be provided by decking more of the long stay car parks at North and South Terminals, as required. We are also exploring the use of machine assisted parking technology in the longer term to increase the capacity and utilisation of existing car parks.

5.2.19 In addition, we are considering the possibility of providing additional surface parking on two particular plots of land which are owned by GAL (see **Plan 18**). The first of these is located between the existing South Terminal long stay car park and the Balcombe Road. This site would be easily accessible from the existing public car parks and would not require an access from the Balcombe Road. The second site is located on the southern boundary of the airport, between the off-airport 'Purple Parking' site and the staff Car Park X. Both sites need further investigation to test their suitability for parking. The landscape, biodiversity and surface water drainage issues will also need to be considered in detail as part of any scheme development.

Commercial accommodation

5.2.20 Over the next fifteen years it is likely that we will see demand for further office and hotel capacity at the airport. The site occupied by South Terminal car rental parking, once it is no longer needed to support the construction of the station improvements, is one option. Another is the site currently occupied by staff car parking to the east of the Hilton Hotel at South Terminal. This area could be used more intensively by providing decked parking solutions, releasing development plots for new commercial premises.

5.2.21 It is possible that, within this timeframe, airlines and/or aircraft maintenance organisations may wish to construct an additional hangar at the airport. A potential site for this has been identified close to the Boeing Hangar (see **Plan 18)** on land currently occupied by car parking, which would need to be reprovided. At this stage we do not see a requirement for additional cargo sheds, as we believe that the forecast growth in cargo can be accommodated within the existing facility.

THE OVERALL DEVELOPMENT PLAN FOR A SINGLE RUNWAY AIRPORT

5.2.22 In this growth scenario, where Gatwick remains a single runway airport, we do not foresee any significant changes to the airport boundary or the configuration of the airport. It will remain a two-terminal operation and land use will be very similar to today.

5.2.23 **Plan 18** shows how we think the airport would appear in 15 years' time in this scenario. This shows that the projects described in our CIP for the next five years and the further improvements needed for the following 10 years could be accommodated within the land available, and without any major changes to the organisation of the airport estate.

5.3 MAKING BEST USE OF THE EXISTING STANDBY RUNWAY

5.3.1 While our work on the growth scenario which would make use of the existing standby runway is not fully completed, we have included a preliminary description of the scheme here to provide information on how it might affect Gatwick's operation and passenger throughput, how the airport infrastructure might need to change, and how it might affect the environmental footprint of the airport.

5.3.2 If it was decided to take this scheme forward in the form of a Development Consent Order application, this would be supported with a wide range of detailed information which would be subject to a full public consultation. If a decision to progress the scheme is taken at the end of 2018 this period of consultation and engagement would start in 2019 and, if the development consent was granted, the standby runway could be brought into use by the mid-2020s.

SCHEME DESCRIPTION

5.3.3 The previous section explained that Gatwick could grow to circa 60mppa over the next fifteen years with the existing single-runway operation, but this growth would eventually be constrained at that level by the limits on available runway capacity. Even with a third runway at Heathrow, the DfT is forecasting a shortfall in UK airport capacity in 2030 and this shortfall is predicted to increase over the following 20 years. Therefore it is highly likely that by 2032, capacity constraints across the London airport system will mean that some travel demand is unmet, and as a result the UK will lose valuable connectivity to international destinations and markets.

5.3.4 Our engagement with airlines, both those already operating at Gatwick and those that would like to do so, strongly indicate that the single runway cannot meet future, longer-term demand. We have therefore explored other ways of delivering additional capacity from Gatwick's existing infrastructure in order to meet the increasing demand for air travel. Specifically, we have been exploring the potential use of the existing standby runway in addition to the existing main runway.

5.3.5 The standby runway is located 198m to the north of the main runway and was granted planning permission in 1979. It provides an alternative runway for use when the main runway is closed for maintenance or as a result of an incident. One of the conditions of the planning permission was that it could not be used simultaneously with the main runway. The simultaneous use of both runways is also ruled out by our Section 52 Agreement with West Sussex County Council. However this agreement expires in 2019.

5.3.6 Having examined the feasibility of using the two existing runways together, we consider that there is a viable way of doing this which will maximise Gatwick's existing potential. This strategy aligns with the Government's policy of making best use of existing runways as outlined in its policy document 'The future of UK aviation: making best use of existing runways'[12].

5.3.7 Our aim would be for the new operation to be contained almost entirely within the existing airport land-take with as few changes to the airport as possible. However any such increase in capacity would mean that some improvements would be needed to supporting infrastructure and we would of course ensure that the airport, and its road and rail links, are not over-stretched.

[12] *DfT, 5th April 2018. gov.uk/government/publications/aviation-strategy-making-best-use-of-existing-runways*

5.3.8 We are still developing the details of this scheme. However we believe that, conceptually, the main runway would continue to accommodate all arriving flights, as it is fully instrumented for use in low visibility weather conditions and it would be difficult to provide the standby runway with this same capability. Departing flights would be split between the two existing runways. As the main runway is longer than the standby runway, we consider that all of the larger, wide-body aircraft would use that for take-off, and the standby runway would be used only for departing smaller aircraft, such as A321, A320 and B737. The method of operation is illustrated in Figure 5.4.

FIGURE 5.4: THE USE OF BOTH EXISTING RUNWAYS FOR DEPARTURES

5.3.9 This method of using the runways would mean that there would be no change to arrivals flight paths, although some departing flights would take-off slightly further to the north. Currently the centrelines of the main and standby runways are separated by 198m but we are considering widening the standby runway by 12m so that its centreline is separated by 210m to comply fully with international airport design guidance.

5.3.10 We do not consider that significant changes to Gatwick's departure and arrivals routes would be necessary to operate the standby runway in the method described. As is the case today, aircraft departing from the standby runway would be able to follow very similar flight profiles to those of aircraft departing the main runway. However, as explained earlier in Chapter 3, these flight paths may change in any case as part of a wider, government and CAA sponsored airspace modernisation programme called FASI(S). Our objective would be for any changes introduced as part of FASI(S) to be capable of supporting the standby runway scheme, as well as delivering operational and environmental benefits.

5.3.11 All passengers would be processed through the existing North and South Terminals. There would however need to be some reconfiguration of these terminals to enable them to accommodate the additional passengers and bags.

5.3.12 By operating the existing standby alongside the existing main runway, in the way described, we believe this would add approximately 10-15 movements per hour to the operation. This gain in capacity would permit more flights to be scheduled and would also add resilience to the operation.

TRAFFIC PROJECTION

5.3.13 Figure 5.5 presents the traffic forecasts for Gatwick with the standby runway in regular use. The indicated forecast range reflects that there is inevitable uncertainty on the precise capacity of this scheme 5-15 years hence. Under this scenario we believe the airport throughput would grow to 68-70 million passengers per annum by 2032, compared to 57-61 million passengers in the single runway scenario.

5.3.14 Air cargo is also forecast to grow strongly in this scenario. Total tonnage is expected to increase from 102,000 tonnes today to around 325,000 tonnes by 2032/33.

FIGURE 5.5: GATWICK GROWTH WITH STANDBY RUNWAY

	2017/18 ACTUAL	2018/19	2019/20	2020/21	2021/22	2022/23	2027/28	2032/33
Passengers (m)	45.7	47.1	49.1	50.6	52.0	52.8	65 – 67	68 – 70
ATMs	280,790	284,270	289,770	294,490	297,670	300,000	360,000 – 365,000	375,000 – 390,000
Passengers per ATM	162.7	165.7	169.4	172.0	174.7	176.0	Around 180	Around 180

ADVANTAGES OF THIS SCHEME

5.3.15 The strength of this scheme is that it would provide more flights, improved connectivity, more employment and economic stimulus to the local area, but with a much reduced scale of development and environmental impact compared to an additional runway to the south. It would require only minor changes to the airport boundary and would not result in the loss of any homes.

5.3.16 We do not consider it to be an alternative to a new runway, in the sense that it cannot provide the same level of long-term growth potential. The proximity of the main and standby runways means that their simultaneous use would add only 10-15 movements per hour to the operation, whereas the wide-spaced additional runway would add around 40-50 movements per hour (see below). However, this standby runway scheme would allow the airport to grow nearer-term whilst the longer-term opportunity of a totally new runway would still exist.

5.3.17 By facilitating this additional growth, Gatwick would provide further employment and training opportunities for local people as well as increasing the airport's overall contribution to the regional and UK economy (see Section 5.6).

5.3.18 The ability to use the main and standby runways simultaneously would also make the airport more resilient to disruption events, such as bad weather or delays caused by en-route airspace restrictions. For example, by bringing the standby runway into regular use we expect to reduce the number of departures on the main runway compared to the current operation. This should make the use of that runway more stable and reduce the number of go-arounds.

5.3.19 Furthermore, it would help preserve the competitive dynamic that has been recently introduced to the London airport system, to the clear benefit of both passengers and airlines. As well as Heathrow's third runway, Stansted, Luton and London City airports all have plans for expansion and this scheme would help Gatwick play its part in offering choice, driving down cost and driving up service levels.

5.3.20 We believe this scheme complements Heathrow's plans for a third runway. The Government's latest traffic forecasts show the capacity generated by Heathrow expansion being taken up very quickly and there is clearly a need for some expansion to take place at other London airports.

5.3.21 At the same time, we recognise that the additional flights generated by the two-runway operation would have some impacts on the environment and this is discussed in Section 5.5.

5.3.22 As the planning consent for the standby runway precludes its simultaneous use with the main runway, we would need to seek a new permission to operate this scheme. If we take this scheme forward, we would expect permission to be secured through the Development Consent Order (DCO) process, which is the planning route recommended for Nationally Significant Infrastructure Projects (NSIPs). Allowing for the time needed to secure planning permission and deliver the necessary infrastructure changes, we believe the standby runway could be brought into regular use by the mid-2020s.

FIGURE 5.6: KEY PROJECTS 2022 TO 2032 (EXISTING STANDBY RUNWAY)

	PROJECTS	PRIMARY PURPOSE
AIRFIELD	Reconfiguration of various elements of the airfield, e.g. : • Widening standby runway • Relocating Juliet taxiway • New resequencing area • Reconfigure RETs • End-around taxiways • Updated navigational aids	Capacity and resilience
	Surface water drainage	EHS, Resilience and Asset Stewardship
TERMINALS	Check-in and bag drop	Capacity and Service Quality
	Security search	Capacity and Service Quality
	Baggage reclaim	Capacity and Service Quality
	Borders	Capacity and Service Quality
	Departure lounges	Capacity and Service Quality
	Additional pier-served gates	Capacity and Service Quality
SURFACE ACCESS	Additional car parking	Capacity
	Road improvements	Capacity, Service Quality and Resilience
COMMERCIAL	Additional support accommodation, offices and hotels	Commercial revenue

CAPITAL INVESTMENT

5.3.23 While the standby runway already exists, substantial investment would still be needed to facilitate its simultaneous use with the main runway and to enable all aspects of Gatwick's operation to accommodate circa 70mppa.

5.3.24 This investment would be entirely privately funded and financed through the standard mechanisms of airport charges to the airlines and revenues raised through our commercial operation. Importantly, this could be achieved within the existing framework of airport charges applying at Gatwick, which Gatwick is proposing to airlines to extend for a further period through to the mid-2020s.

5.3.25 The main physical changes to the airport, beyond those described in the section above, are described below and are illustrated in **Plan 19.**

The airfield

5.3.26 The major part of the construction works would be to reconfigure the airfield. As well as widening the standby runway, to create the necessary separation between it and the main runway, we would expect to see a number of other changes to the airfield. The most significant would be:

CHANGES

The existing 'Juliet' taxiway located to the north of, and parallel to, the standby runway would be moved further to the north. The maximum adjustment would be 27m but it may not be necessary to move the whole length of the taxiway by this amount.

It may be necessary to construct a resequencing and holding area at the western end of Juliet taxiway for use when runways 08L and 08R are in operation. We would consider some form of new noise barrier around this holding area.

The existing Rapid Exit Taxiways (RETs) serving the main runway (in both the 26L and 08R directions) would need to be reconfigured and additional RETs may be required

It may be necessary to build a new taxiway around the western end of the main and standby runways to allow some aircraft to taxi between the main runway and Juliet taxiway without crossing the standby runway. Similarly the existing Yankee taxiway might be brought into regular use to perform the same function at the eastern end of the runways.

There would need to be modifications to the airfield ground lighting system and to some navigational aids.

We would need to consider improvements to the surface water drainage infrastructure in order to deal with the additional run-off caused by the new taxiways and to ensure there is no increase in flood risk either on, or off, airport. Initial investigations suggest that we would need to build a new, or enlarge an existing balancing pond.

Other airport infrastructure

5.3.27 Both terminals would require further internal modifications to provide the necessary processing capacity. Our focus for delivering this will be on the use of process and technology improvements and internal reconfiguration to make the most efficient use of the existing buildings. However it is possible that some form of expansion of one, or both terminals, may be necessary.

5.3.28 At the upper end of the forecast range, we believe it may be necessary to provide additional pier served stands. These could be provided in one of the three pier locations described under the existing main runway scenario and illustrated in **Plan 19.**

5.3.29 Additional, or replacement, car parking would be provided by the additional decking of surface parking areas or the provision of additional multi-storey car parks. As well as accommodating the additional demand for parking, these new spaces would replace any existing car parking lost as a result of the other infrastructure projects. Sites for additional offices and/or hotels could be provided in the staff car park area adjacent to the South Terminal Hilton Hotel.

Surface access

5.3.30 The local road network would require some further upgrades, most likely around the two main roundabouts serving North and South Terminals. We are considering options for enhancing road capacity where it may be required in line with anticipated growth. If the standby runway scheme is taken forward, the optimum highways solution would be identified through further road modelling and through discussion with Highways England and the Local Highway Authorities. It would also form the basis of a detailed Transport Assessment which would be a key input to a DCO application.

5.3.31 The Transport Assessment would also identify new mode share targets for the airport operating at the higher capacity generated by the standby runway scheme along with strategies for delivering these through improvements to infrastructure serving public transport/sustainable travel options.

5.3.32 Any improvements to surface access that are required for expansion under the DCO application would be covered by the Transport Assessment and will be paid for by Gatwick in accordance with the DfT's stated policy on funding surface access improvements necessary for expansion. We would work closely with Highways England, Network Rail and local highway authorities to ensure that any measures to support access to the airport also take account of the needs of non-airport traffic and are not detrimental to overall network performance

NEXT STEPS

5.3.33 If it is decided to progress this scheme, we would expect to start the process of consulting on a DCO application during 2019. As part of this DCO process we would be required to demonstrate that we have fully investigated all impacts of the scheme and ensured that these are adequately mitigated. This would involve a process of detailed engagement with all stakeholders as well as public consultation on the main features of the scheme.

5.3.34 Assuming that we start preparing a DCO consultation at the beginning of 2019, we would bring forward and consult on a wide range of information relating to this scheme during that year, prior to the submission of a DCO application which would probably follow in 2020. We would anticipate consulting on environmental mitigation and compensation measures at the same time.

Mitigation measures

5.3.35 At this early stage we have not completed enough work to firmly establish the environmental impacts of this scheme, although an early indication is provided in section 5.5 below. If we take this scheme forward, we would fully investigate, and consult on, the appropriate mitigation measures, once the environmental impacts are fully understood. This would include (but not be limited to) consideration of measures to reduce noise impacts, and to share the benefits of the airport's growth e.g. through education and training programmes.


2
GATWICK EXPRESS

5.4 SAFEGUARDING FOR AN ADDITIONAL RUNWAY TO THE SOUTH

5.4.1 Gatwick is no longer actively pursuing plans for an additional runway, but there nevertheless remains the possibility of building and operating one in the future. Should this, or a future, Government decide to support an additional runway at Gatwick, we would be ready to take this forward with a view to seeking development consent. Should such policy support materialise, then it would be feasible to open the additional runway towards the end of the 5 to 15 year period. It is for this reason that we have included the additional runway in this draft master plan.

5.4.2 Our proposal to the Airports Commission was for a full length runway, to be built parallel to, and 1,045m to the south of, the existing main runway. The resulting two-runway airport would be capable of handling around 98 aircraft movements per hour, compared with 55 today.

5.4.3 This runway spacing would allow a new terminal and apron zone to be developed between the two runways, which is the optimum location to minimise taxiing times to and from the runways. The new terminal and apron would have an ultimate capacity of around 50mppa and would be constructed in phases, in line with growing passenger throughput.

5.4.4 Gatwick's additional runway scheme is illustrated in **Plan 20**. Full details of this scheme, as submitted to the Airports Commission, can be viewed here gatwickairport.com/secondrunway

Traffic projection

5.4.5 An additional runway would add significant capacity to the existing airport, approximately doubling its size. The traffic forecasts we submitted to the Airports Commission in 2014 assumed it would open in 2025. That is now not possible. However an additional runway could be open in less than 10 years after receiving policy support from Government.

5.4.6 As there are no timescales for constructing an additional runway, we do not present traffic forecasts in this section. However, based on our submission to the Airports Commission, we are confident that within 5 years of its opening, the airport's throughput could have increased by an additional 20mppa. The eventual capacity of Gatwick with an additional runway would be around 95mppa which might be reached within 20 or 25 years from opening the additional runway

Capital investment

5.4.7 The addition of an additional runway to the south of Gatwick would require a significant investment in land and property acquisition, road and river diversions, airfield and terminal developments and supporting infrastructure such as car parking. Our proposal to the Airports Commission was costed at £7.6bn, with the first phase costing £3bn (in 2014 prices).

Surface access

5.4.8 Our transport studies for the Airports Commission showed that the already planned and funded rail and road upgrade programmes, along with further enhancements which would be paid for by Gatwick, such as the diversion and improvement of the A23, would enable the airport to meet all the passenger demands from an additional runway without any further taxpayer investment. The surface access improvements for the additional runway scheme are illustrated in **Plan 22.**

5.4.9 These planned improvements in rail, bus and coach infrastructure and services, would enable Gatwick to achieve a very high use of sustainable modes of transport. With the additional runway Gatwick would achieve a 60% public transport mode share for passengers and a 50% sustainable mode share for staff.

Land safeguarding

5.4.10 As required by Government, land is currently safeguarded for the additional runway. We work constructively with Crawley Borough Council to ensure that, in this safeguarded area, development does not take place which would be incompatible with the additional runway.

5.4.11 While we are not actively pursuing an additional runway at Gatwick we believe it is in the national interest to continue with this strategy of land safeguarding. This will preserve the option of building an additional runway in the future to meet the future airport capacity gap that the Government's forecasts indicate will occur even with a third runway constructed at Heathrow.

5.4.12 The area of land currently safeguarded for the additional runway was based on a much earlier scheme developed by the previous airport owners, BAA. This currently safeguarded area is illustrated in **Plan 21.** In developing our proposals for the Airports Commission, we sought to contain the development within this land boundary wherever possible. However, to meet operational requirements, we found it necessary to make some adjustments to this boundary. The revised land boundary for the additional runway is also shown in **Plan 21**. We recommend that the area safeguarded for the additional runway by the Local Planning Authorities, is modified to conform to this latest boundary.

5.4.13 Should Crawley Borough Council adopt our definition of the current airport boundary contained in this draft master plan (see Chapter 2), it would also be necessary to adjust the safeguarded land area so that it abuts the revised airport boundary.

Our pledges for the additional main runway

5.4.14 We recognised that the additional runway scheme would impact significantly on the local area and community in positive and negative ways. To offset these adverse impacts, Gatwick committed to a number of pledges including:

- £46.5m of funding to help local authorities deliver essential community infrastructure
- £3.75m of funding to help create 2,500 new apprenticeships for local people
- Increased compensation funds for those homeowners most affected by expansion
- A new Engagement Charter and dedicated team to help landowners and businesses
- Exploration of all potential noise management initiatives including international best practice
- A continuation of full compliance with all legal air quality standards
- A local roads fund (£10m), a contribution of circa £2m per annum to the Passenger Transport Levy and a world class 60% public transport mode share

5.4.15 Since 2005 we have had in place two blight schemes relating to the additional runway:

- The Property Market Support Bond (PMSB) is for those with homes which would need to be purchased to make way for the runway. The Bond allows owners to require GAL to acquire their property for its pre-scheme open market value, a home loss payment of 25% and costs. It becomes exercisable upon GAL confirming that GAL intends to apply for planning permission for the additional runway. It expires on 1st January 2020.
- The Home Owner Support Scheme (HOSS) is for those with homes newly affected by a high level of noise as a result of the additional runway. The HOSS scheme operates from the date GAL confirms that GAL intends to apply for planning permission for the additional runway. Homeowners can require GAL to acquire their property for its pre scheme open market value once GAL announces an intention to begin construction of the additional runway or earlier in certain circumstances.

5.4.16 We understand local residents will want to know whether we will be renewing the PMSB, and whether we will be introducing any additional schemes in relation to our other proposals for capacity enhancement. We confirm that we will be bringing forward new proposals for replacement schemes in due course.

5.5 KEY ENVIRONMENTAL IMPACTS OF THE GROWTH SCENARIOS

5.5.1 This section describes how the key environmental issues of carbon emissions, air quality and air noise would potentially vary under the three growth scenarios described above. It includes the best information available at the time of publication. However it should be noted that:

- We have not yet completed a full assessment of environmental impacts of the standby runway scheme. If a Development Consent Order (DCO) application for the standby runway scheme is brought forward then, as part of this, we would prepare a full Environmental Impact Assessment (EIA).
- If an additional main runway were to be taken forward in the future, the environmental impacts reported to the Airports Commission would have to be revisited and updated, to reflect the new development timescales and any other changes in the scheme. The environmental indicators shown below for the additional runway scheme are based on our 2014 submission to the Airports Commission. They relate to Gatwick with an additional runway operating in 2040 with a throughput of approximately 83mppa.

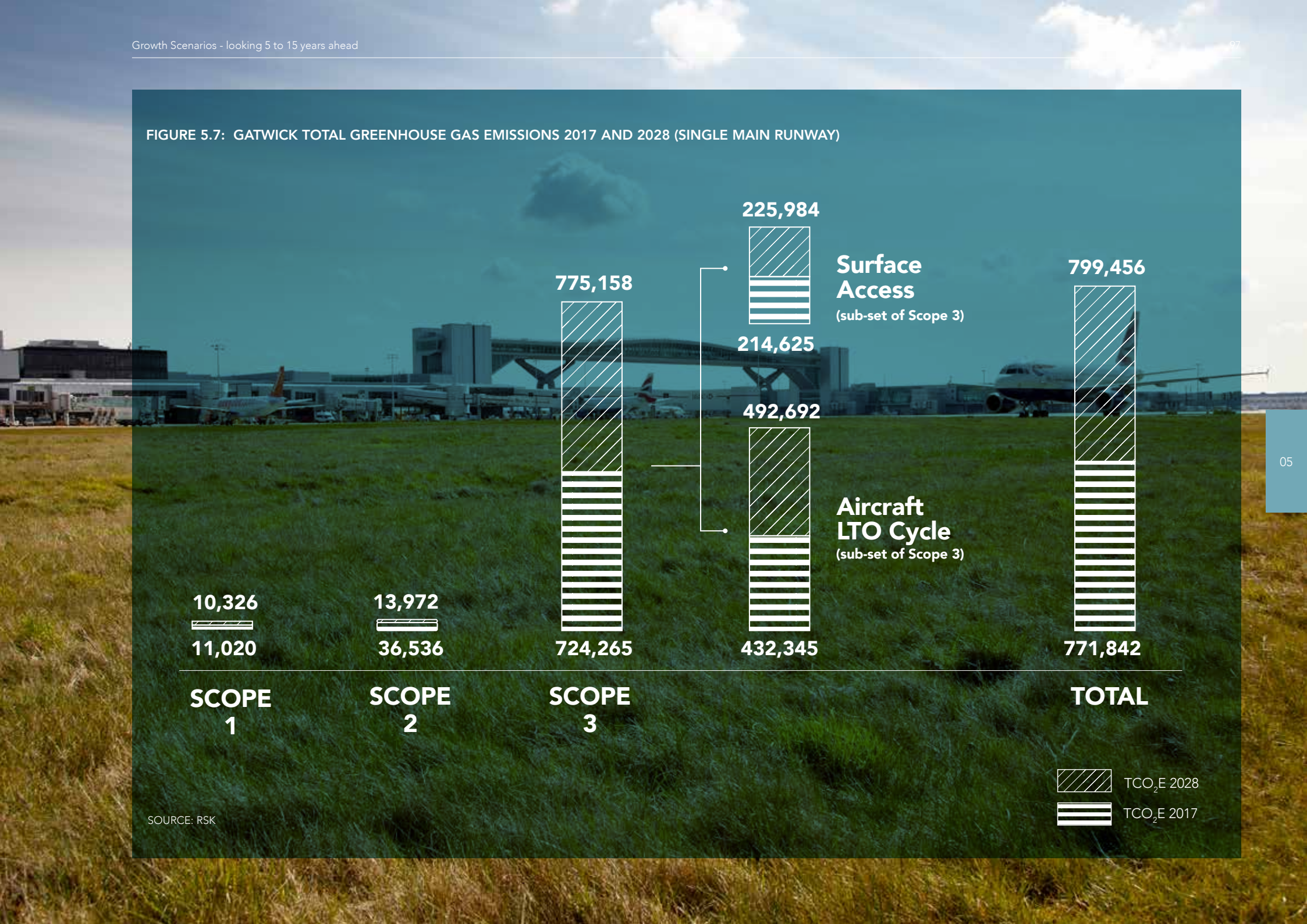
5.5.2 Chapter 6 provides more detail on our environmental management strategies and how we are working to limit the airport's environmental impacts.

CARBON EMISSIONS

The existing main runway

5.5.3 The carbon emissions produced by Gatwick in 2017, along with estimates for 2028, are shown in Figure 5.7. The largest component is the Landing and Take-off (LTO) cycle which measures carbon produced by aircraft approaching or departing the airport, below an altitude of 3,000ft. This and the passenger surface access elements account for the majority of Scope 3 emissions. (Scope 1, 2 and 3 emissions were explained in paragraph 4.5.12).

FIGURE 5.7: GATWICK TOTAL GREENHOUSE GAS EMISSIONS 2017 AND 2028 (SINGLE MAIN RUNWAY)



SOURCE: RSK

5.5.4 Figure 5.7 shows a small predicted increase in total carbon emissions as a result of the forecast increase in aircraft movements. However Scope 1 and 2 emissions are predicted to continue falling and by 2028 are expected to be 70% lower than the 1990 baseline. Separate modelling indicates that our Decade of Change target for carbon should be achieved by the end of 2020. This target is to achieve a 50% reduction compared to our 1990 baseline of 82,843 tCO_2e (Scope 1 and 2).

5.5.5 While Figure 5.7 indicates modest growth in Scope 3 emissions this projection does not incorporate reductions from known opportunities to achieve much lower emissions. Further efficiency improvements in the management of the airspace and airfield operation have the potential to deliver shorter flight-paths and reduced holding, both of which should reduce fuel burn and emissions. Accelerating the shift to public transport and the transition to electric and low-carbon vehicles would reduce surface access emissions. The Sustainable Aviation (SA) sustainable fuel road map also highlights the huge opportunity presented by sustainable aviation fuels. SA calculates that sustainable fuels could deliver up to 24% reduction in CO_2 emissions from UK aviation by 2050..

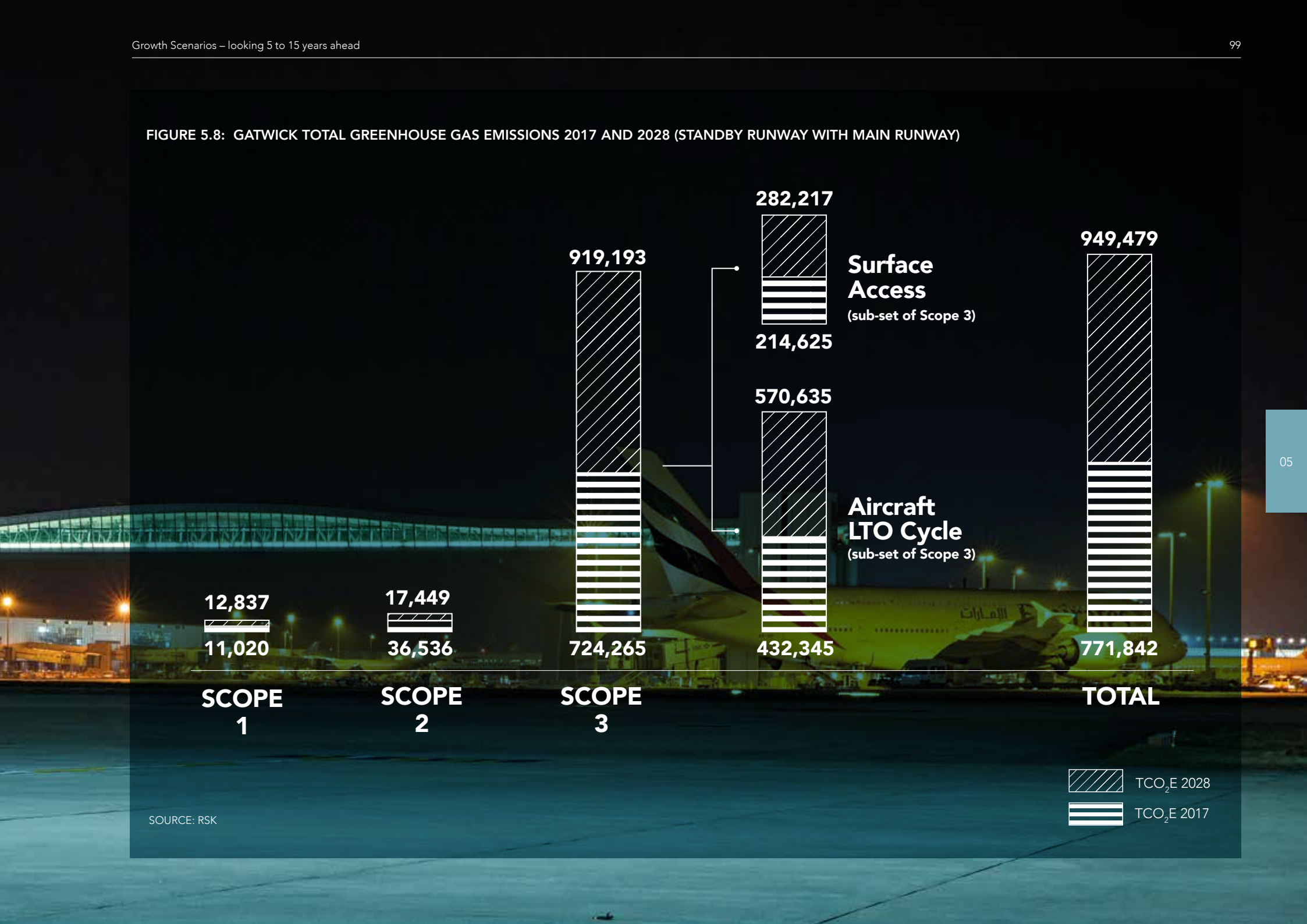
5.5.6 The Government has recognised these opportunities in its recent policy announcement on 'Making the Best Use of Existing Runways'. In this it presents analysis of the impacts of carbon emissions from airport growth, alongside the expansion of Heathrow. It concluded that measures such as uptake of renewable fuels and reduction of aircraft fuel use by operational measures, such as single engine taxiing, would be expected to enable the Committee on Climate Change's planning assumptions for total UK aviation emissions to be met.

5.5.7 Gatwick is closely involved in supporting these initiatives so that future greenhouse gas emissions are as low as possible.

The existing standby runway

5.5.8 We have also undertaken some provisional analysis of airport-wide carbon emissions in the event that the standby runway is used together with the main runway. The results are shown in Figure 5.8. The analysis indicates higher carbon emissions than with the existing main runway as a result of the greater passenger and aircraft throughput. However, as explained above, we are closely involved in key initiatives that provide opportunities for delivering a lower carbon footprint than that indicated.

FIGURE 5.8: GATWICK TOTAL GREENHOUSE GAS EMISSIONS 2017 AND 2028 (STANDBY RUNWAY WITH MAIN RUNWAY)



SOURCE: RSK

An additional runway to the south

5.5.9 Our additional runway proposals submitted to the Airports Commission included many initiatives designed to minimise the amount of carbon produced. These included:

- A compact airfield layout, designed to minimise taxiing distances and runway holding, in order to reduce fuel burn.
- A Surface Access Strategy designed to maximise the use of public transport and support wider sustainable travel patterns and low carbon modes of transport.
- Highly efficient building design, technology and management systems.
- A zero carbon energy strategy, including an integrated approach to managing airport energy, waste and water resources.

5.5.10 Our submission showed that future carbon emissions would increase as a result of an additional runway as shown in Figure 5.9. Note that the modelled year is 2040 which means the results are not directly comparable with the two tables above. The initiatives outlined above mean that emissions on a per passenger basis, would be lower than in a single runway scenario.

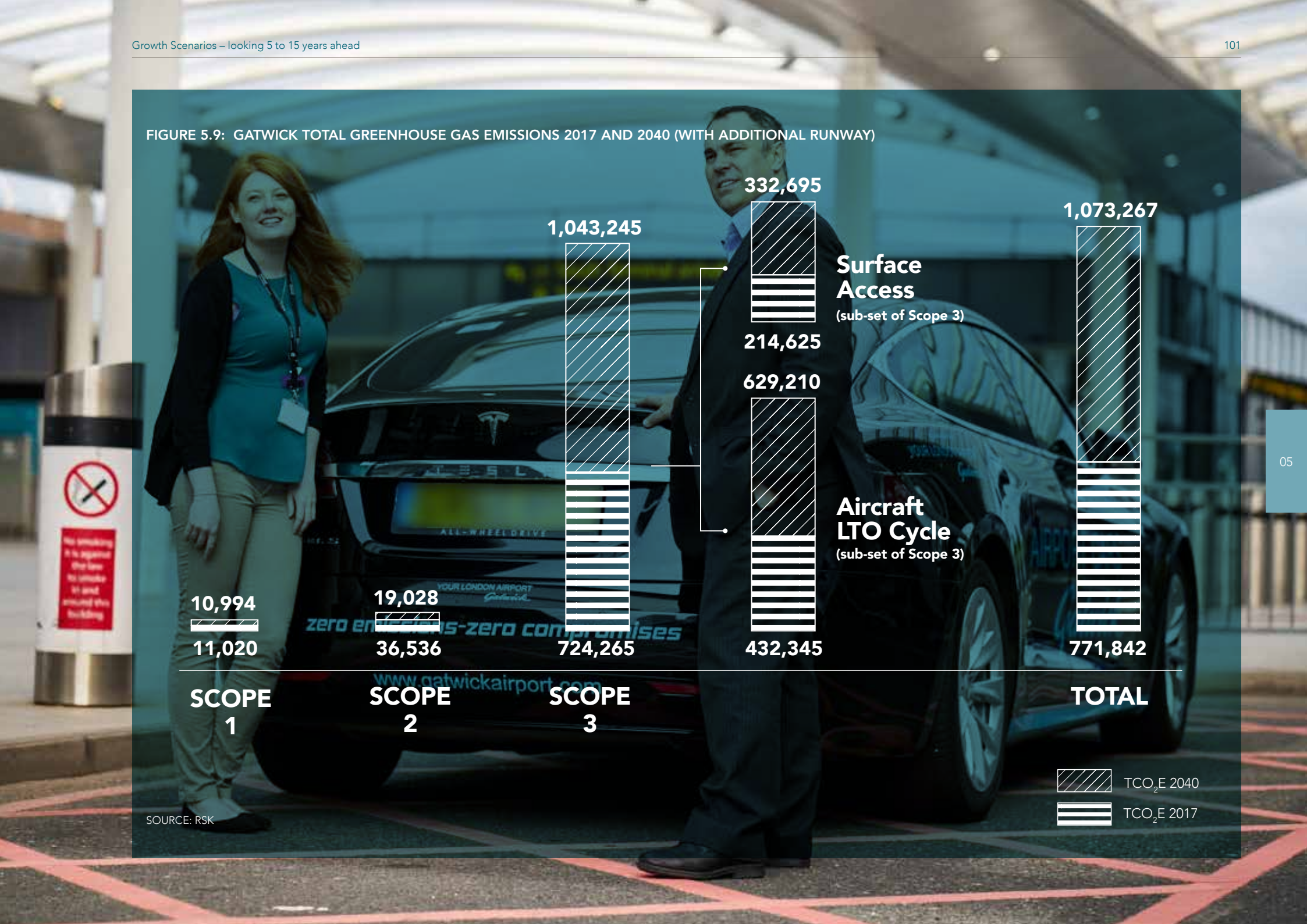
5.5.11 Our proposals also included strategies to minimise carbon during construction, drawing on experience of other major infrastructure projects such as the Olympic Park in London. These included minimising embodied carbon through a Sustainable Materials Strategy (e.g. the use of low carbon concrete mixes) and an innovative Construction Waste Management Strategy to optimise rates of re-use and recycling.

Sustainable Aviation calculates that sustainable fuels could deliver up to

24% REDUCTION IN CO_2

emissions from UK aviation by the 2050s

FIGURE 5.9: GATWICK TOTAL GREENHOUSE GAS EMISSIONS 2017 AND 2040 (WITH ADDITIONAL RUNWAY)



SOURCE: RSK

AIR QUALITY

The existing main runway

5.5.12 ARUP has updated the airport's five yearly emissions inventory and used this data to model the 2015 concentrations of pollutants at sensitive receptors in a 10km by 10km study area around the airport. The assessment showed that total Gatwick emissions of NO_2, PM10 and PM2.5 in 2015 were lower than in 2010 when the previous emissions inventory was undertaken. All modelled concentrations of pollutants were below the specified limits identified in Figure 4.4. The highest modelled 2015 concentrations in the area around Gatwick were 33.3µg/m^3 for NO_2 (in Horley), 18.3µg/m^3 for PM10 (in Crawley) and 13.0µg/m^3 for PM2.5 (in Horley).

5.5.13 ARUP also ran the air quality model to test pollutant concentrations in 2028 with increased traffic volumes on the existing main runway. Again the results show no exceedances at any receptor location. The highest predicted values were 19.7µg/m^3 for NO_2 (in Horley), 16.6µg/m^3 for PM10 (in Crawley), and 12.0µg/m3 for PM2.5 (in Horley). The improvements compared to the 2015 results were largely the result of predicted cleaner engine technology for road vehicles.

The existing standby runway

5.5.14 Given the modelled results for the single-runway pollutant concentrations in 2028, and the mitigation options available to us, we do not believe that there will be any exceedance of local air quality limits caused by the standby runway scheme. We also know that detailed modelling of the airport with an additional runway to the south, which generated much higher levels of air traffic, showed no exceedances of these limits. This gives us confidence that Gatwick's growth with both the main and standby runways in simultaneous use would not cause any exceedances of air quality standards in the local area.

5.5.15 If this scheme is taken forward, we would carry out, and consult on, detailed air quality modelling as part of a full Environmental Impact Assessment, which would quantify the expected concentrations of NO_2, PM10 and PM2.5 in the area around Gatwick.

An additional runway to the south

5.5.16 As part of our work for the Airports Commission we commissioned detailed air quality modelling to test whether there would be any exceedances of the limits for pollutant concentrations in the area around Gatwick. This modelling showed that, while there would be additional emissions to atmosphere, notably of NO_2, PM10 and PM2.5, these emissions would have very little impact on local air quality in residential areas adjacent to the airport boundary. Importantly the annual average concentrations of NO_2, PM10 and PM2.5 in the area around Gatwick would be well within EU limit values.

FIGURE 5.10: SUMMER DAY NOISE EXPOSURE CHANGE FROM 2017 TO 2028 AND 2032 (EXISTING MAIN RUNWAY)

NOISE METRIC	POPULATION		
	2017 (Standard)	2028 Main runway	2032 Main runway
Leq summer day 54dB	10,950	9,000	8,000
Leq summer day 57dB	3,400	2,400	2,600
Leq summer day 60dB	1,500	1,200	900
Leq summer day 63dB	550	500	400
Leq summer day 66dB	350	200	200
Leq summer day 69dB	150	100	100
Leq summer day 72dB	150	0	0

SOURCE: CAA ERCD

AIR NOISE

The existing main runway

5.5.17 The air noise footprint of Gatwick's operations is measured and reported annually in the form of noise contour reports. The CAA's Environmental Research and Consultancy Department (ERCD) has produced actual noise contours for 2017 and predicted contours for 2028 and 2032 with the existing main runway in use. The populations within these noise contours are shown in Figures 5.10 and 5.11.

5.5.18 Figures 5.10 and 5.11 show that noise levels with the existing main runway are expected to reduce by 2028 and the downward trend generally continues through to 2032. This reduction results from the introduction of quieter 'new generation' aircraft which will replace existing aircraft types over this period. In noise exposure terms this change in fleet mix is forecast to outweigh the effects of increasing flight numbers.

NOISE LEVELS ARE EXPECTED TO REDUCE

by 2028 and the downward trend continues through to 2032

FIGURE 5.11: SUMMER NIGHT NOISE EXPOSURE CHANGE FROM 2017 TO 2028 AND 2032 (EXISTING MAIN RUNWAY)

NOISE METRIC	POPULATION		
	2017 (10 year average)	2028 Main runway	2032 Main runway
Leq summer night 48dB	13,550	10,400	9,100
Leq summer night 51dB	6,650	4,500	4,600
Leq summer night 54dB	1,800	1,300	1,200
Leq summer night 57dB	750	500	400
Leq summer night 60dB	350	400	300
Leq summer night 63dB	200	200	200
Leq summer night 66dB	150	0	0
Leq summer night 69dB	0	0	0
Leq summer night 72dB	0	0	0

SOURCE: CAA ERCD

5.5.19 For example, the 'A320 neo' and 'B737 Max 8', aircraft that are expected to make up nearly 50% of the Gatwick fleet by 2028, will be about 4dB quieter on departure and 2dB quieter on approach compared to current equivalent aircraft. This is expected to reduce Gatwick's noise footprint despite increased movements.

5.5.20 It should be noted that these contours have been calculated using traffic data which is representative of the forecast ranges presented in Figure 5.1. The contours do not make any allowance for changes in the design of airspace which, as explained in Section 3.4, should create the opportunities for noise reduction initiatives.

5.5.21 Noise contours for the metrics identified above are illustrated in the following plans:

- **Plan 14:** 2017 Average summer day Leq.
- **Plan 15:** 2017 Average summer night Leq.
- **Plan 23:** 2028 Average summer day Leq.
- **Plan 24:** 2028 Average summer night Leq.
- **Plan 25:** 2032 Average summer day Leq.
- **Plan 26:** 2032 Average summer night Leq.

The existing standby runway

5.5.22 The potential air noise impacts of the airport using the existing main and standby runways simultaneously will naturally be a key focus for local communities. To address this important issue, we have investigated the possible scale of change that could occur as a result of this growth.

5.5.23 Figures 5.12 and 5.13 present the preliminary results of the initial analysis carried out to date. It shows how the populations within the different noise contours might vary between the single runway airport today and the airport with the main and standby runways operating together in 2028 and 2032.

FIGURE 5.12: SUMMER DAY NOISE EXPOSURE CHANGE FROM 2017 TO 2028 AND 2032 (MAIN AND STANDBY RUNWAYS)

NOISE METRIC	POPULATION		
	2017 (Standard)	2028 Main and standby runway	2032 Main and standby runway
Leq summer day 54dB	10,950	10,800	10,000
Leq summer day 57dB	3,400	3,900	4,100
Leq summer day 60dB	1,500	1,400	1,300
Leq summer day 63dB	550	600	500
Leq summer day 66dB	350	300	300
Leq summer day 69dB	150	200	100
Leq summer day 72dB	150	0	0

SOURCE: CAA ERCD

5.5.24 Figures 5.12 and 5.13 show that the number of people affected by day-time noise in 2028 and 2032, with the standby runway scheme in operation, should be broadly comparable to today. This means that, while there will be more flights, this will be balanced by the fact that aircraft will be quieter, resulting in little overall change in the number of people living within each Leq noise contour. There is a more apparent reduction in night-time noise as there is assumed to be no traffic growth in the night quota period and therefore the positive impact of quieter aircraft types is more pronounced.

5.5.25 Again, it should be noted that the noise results presented relate to aircraft movements which are representative of the forecast range shown in Figure 5.5. If we bring forward a DCO application for the standby runway scheme we will prepare a more detailed assessment of noise as part of the Environmental Impact Assessment (EIA).

5.5.26 A comparison of Tables 5.10/5.11 and 5.12/5.13 shows that the use of the standby runway will increase the 2028 and 2032 contour populations, compared to a single runway scenario in the same year. Where people do experience an increase in noise, compared to a single-runway scenario, we expect the increase to be less than 3dB in nearly all cases. In this scenario, the flight paths are expected to be very similar to the current ones meaning that there will be very few people newly affected by noise, unlike the additional runway scheme where the new runway 1km to the south of the existing airport would spread the noise footprint over a significantly wider area.

FIGURE 5.13: SUMMER NIGHT NOISE EXPOSURE CHANGE FROM 2017 TO 2028 AND 2032 (MAIN AND STANDBY RUNWAYS)

NOISE METRIC	POPULATION		
	2017 (10 year average))	2028 Main and standby runway	2032 Main and standby runway
Leq summer night 48dB	13,550	11,000	10,200
Leq summer night 51dB	6,650	4,900	4,900
Leq summer night 54dB	1,800	1,500	1,400
Leq summer night 57dB	750	600	500
Leq summer night 60dB	350	300	300
Leq summer night 63dB	200	100	100
Leq summer night 66dB	150	0	0
Leq summer night 69dB	0	0	0
Leq summer night 72dB	0	0	0

SOURCE: CAA ERCD


54L
101
112

5.5.27 Noise contours for the metrics referred to above are illustrated in the following plans:

- **Plan 14:**
  2017 Average summer day Leq.
  (existing main runway)
- **Plan 15:**
  2017 Average summer night Leq.
  (existing main runway)
- **Plan 27:**
  2028 Average summer day Leq.
  (main and standby runway)
- **Plan 28:**
  2028 Average summer night Leq.
  (main and standby runway)
- **Plan 29:**
  2032 Average summer day Leq.
  (main and standby runway)
- **Plan 30:**
  2032 Average summer night Leq.
  (main and standby runway)

5.5.28 As explained in Section 5.3 above, if it is decided to progress this use of the standby runway, we would expect to start the process of preparing a DCO consultation during 2019. As part of this DCO process we will be required to demonstrate that we have fully investigated all air noise impacts of the scheme and ensured that these are adequately mitigated. This would involve a process of detailed engagement with all stakeholders as well as public consultation on noise impacts and appropriate noise mitigation measures.

An additional runway to the south

5.5.29 For our work for the Airports Commission we submitted, in 2014, detailed information on the noise impacts of the proposed additional runway as forecast at that time. The 2040 summer day contours are shown in Figure 5.14. This shows a much larger number of people affected by noise than the two other growth scenarios now being considered, as a result of the much higher number of aircraft movements with an additional runway.

5.5.30 The noise contours for the metrics identified above are illustrated in the following plans:

- **Plan 14:**
  2017 Average summer day Leq.
- **Plan 31:**
  2040 Average summer day Leq with additional runway

5.5.31 Note that while we produced a range of noise impact metrics for the additional runway which can be found at gatwickairport.com/secondrunway we did not produce Leq contours for the 8-hour summer night period, hence their exclusion from this section.

FIGURE 5.14: SUMMER DAY NOISE EXPOSURE CHANGE FROM 2017 TO 2040 (WITH THE ADDITIONAL RUNWAY)

NOISE METRIC	POPULATION	
	2017	2040 Additional runway
Leq summer day 54dB	10,950	32,200
Leq summer day 57dB	3,400	15,400
Leq summer day 60dB	1,500	6,200
Leq summer day 63dB	550	1,400
Leq summer day 66dB	350	100
Leq summer day 69dB	150	<100
Leq summer day 72dB	150	0

SOURCE: CAA ERCD

5.6 KEY ECONOMIC IMPACTS OF THE GROWTH SCENARIOS

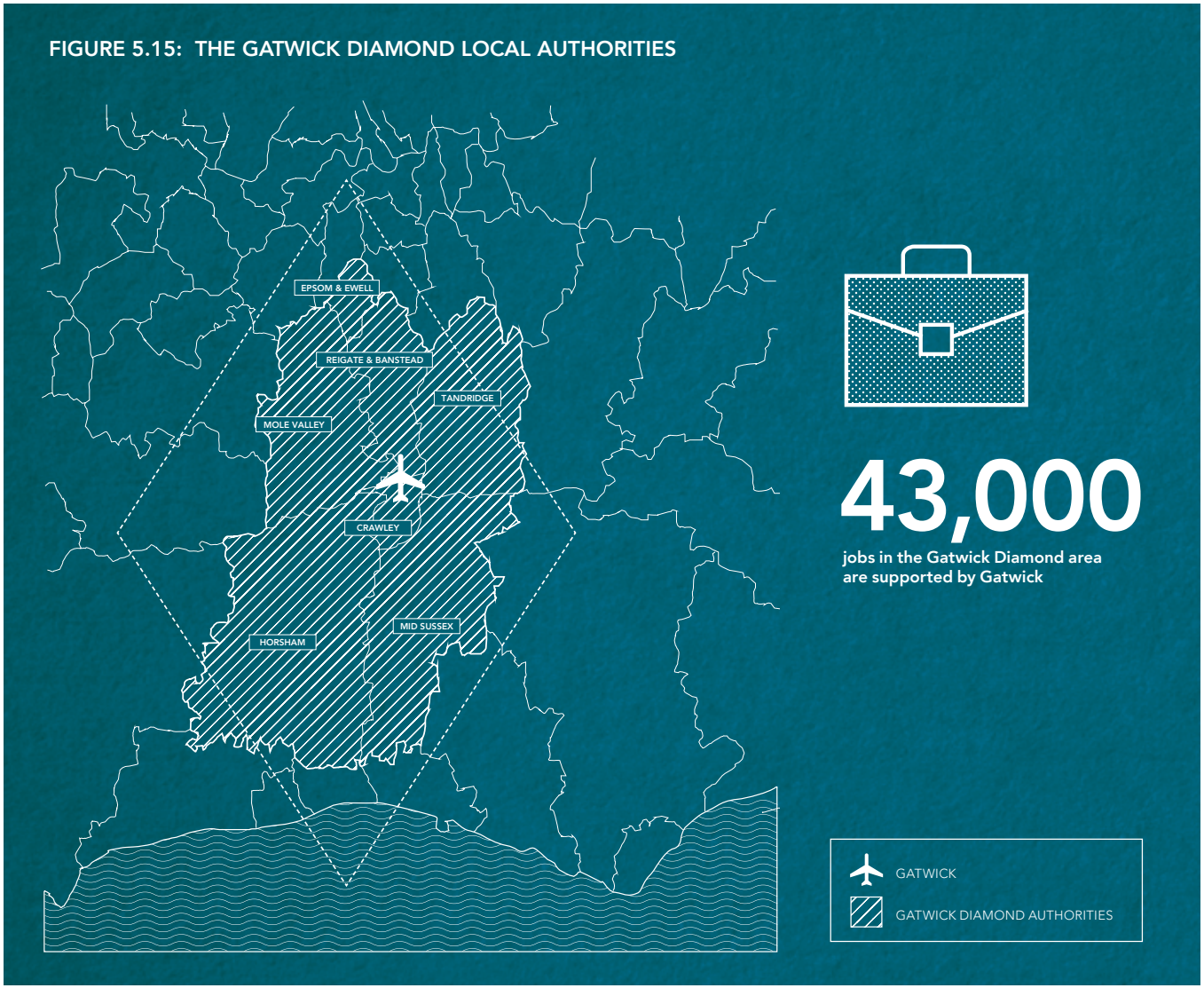
The existing main runway

5.6.1 Each year the UK aviation sector carries over 250m passengers and 2.5m tonnes of cargo. As the second busiest airport in the UK. Gatwick contributed a significant portion of this traffic and in doing so contributes substantial value to the UK economy. Oxera has calculated that Gatwick contributes £4.1bn to UK GDP.

5.6.2 Gatwick makes a significant contribution to the local economy. Nearly 24,000 people work at the airport and airport-based businesses purchase goods and services from a variety of local suppliers. GAL alone spent £133m with local businesses in 2017.

5.6.3 Oxera has examined the current and future (2028) economic contribution made by Gatwick to the UK and, in particular, the Gatwick Diamond area around Gatwick. The Gatwick Diamond is a business-led partnership established to improve the economic performance of the local area surrounding Gatwick, where the majority of the economic benefits of the airport are focused (see Figure 5.15).

FIGURE 5.15: THE GATWICK DIAMOND LOCAL AUTHORITIES



Gatwick's economic footprint

5.6.4 Gatwick's 2016 staff survey showed that around 24,000 people are employed at the airport (direct on-airport employment). Oxera estimates that, through Gatwick's supply chain, a further 37,000 indirect jobs are created outside the airport boundary, along with a further 10,000 jobs through catalytic effects, generating a total of 71,000 jobs. By 2028 this is predicted to increase to 79,000 jobs with Gatwick operating with the existing main runway (see Figure 5.16).

5.6.5 Of this 2017 total of 71,000 jobs, Oxera estimates that 43,000 are in the Gatwick Diamond area.

5.6.6 The existence of these direct and indirect jobs contributes to the generation of economic value to the local and wider economy. This can be measured as 'gross value added' (or GVA) which is the total value of output from Gatwick, minus the value of inputs to its supply chain. Oxera estimate the 2017 GVA through Gatwick's activity to be around £1.5bn, rising to a total of £4.1bn once indirect off-airport activity and catalytic effects are accounted for. Oxera used the same methodology to calculate GVA in 2028. Both sets of results are shown in Figure 5.17.

FIGURE 5.16: TOTAL EMPLOYMENT SUSTAINED BY GATWICK

TYPES OF JOBS	NUMBER OF JOBS (ROUNDED) 2017	NUMBER OF JOBS (ROUNDED) 2028 (ESTIMATED)
Direct jobs	24,000	28,000
Indirect jobs	37,000	41,000
Catalytic jobs	10,000	11,000
Total jobs	71,000	79,000

SOURCE: GATWICK EMPLOYER SURVEY 2016 AND OXERA ANALYSIS

FIGURE 5.17: ESTIMATED GVA (UK WIDE) SUPPORTED BY GATWICK – 2015 AND 2028

	2017 GVA (£M)	2028 GVA (£M)
Direct footprint – GVA	1,495	1,848
Indirect footprint – GVA	2,050	2,559
Catalytic footprint – GVA	572	652
Total GVA	4,117	5,059

SOURCE: OXERA


GGS
TREPEL
GGS

The net economic and welfare effects

5.6.7 To understand the true economic value and benefit created by Gatwick, it is important to understand what would happen to the economy in the airport's absence. This process is described as calculating the net impact and it is the standard approach adopted by other organisations when assessing economic value. Oxera has calculated Gatwick's net impact by comparing differences in economic activity and welfare in the Diamond between the status quo in 2017, and a hypothetical situation without the airport. The same approach has also been taken for 2028.

5.6.8 For its assessment of these benefits, Oxera used a methodology consistent with that set out by the Department for Transport in its web Transport Analysis Guidance (webTAG)[13]. Amongst other considerations, the net economic impact takes account of current airport employees who might need to find a job in another area, or accept a less productive job in the Gatwick Diamond.

5.6.9 The methodology also considers the welfare benefits of Gatwick, including the shorter travel times to/from the airport for Gatwick Diamond workers and residents.

5.6.10 By following this approach Oxera calculates Gatwick's net economic benefit to the Diamond in 2017 was £1.44bn with a further welfare net benefit of £30m. For 2028 Oxera calculates that these will increase to £1.71bn and £44m respectively. These results are shown in Figure 5.18.

5.6.11 Looking beyond the Gatwick Diamond area, Oxera has made estimates of the economic benefits of Gatwick to the local counties and to the Coast to Capital LEP area, both for the situation in 2017 and 2028. The results are shown in Figure 5.19.

FIGURE 5.18: SUMMARY OF NET ECONOMIC IMPACT IN THE GATWICK DIAMOND AREA

	2017	2028
Net economic impact	£1,442m	£1,713m
Wider welfare impacts	£30m	£44m

NOTE: ALL VALUES IN 2017 PRICES
SOURCE: OXERA ANALYSIS

FIGURE 5.19: ECONOMIC BENEFITS OF GATWICK IN THE WIDER REGIONAL AREA

		2017	2028
East Sussex, West Sussex, Surrey, and Kent, and the unitary authority of Brighton and Hove	Residents employed at Gatwick	15,500	18,000
	Wages received	£417m	£527m
	Economic output supported by Gatwick supply chain	£1.4bn	£1.8bn
	Jobs supported by Gatwick supply chain	25,700	28,800
Coast to Capital LEP	Residents employed at Gatwick	14,500	17,000
	Wages received	£393m	£497m
	Economic output supported by Gatwick supply chain	£771m	£963m
	Jobs supported by Gatwick supply chain	13,900	15,600

NOTE: THE BENEFITS FOR THE LISTED COUNTIES AND FOR THE LEP ARE NOT ADDITIVE AS BOTH AREAS OVERLAP
SOURCE: OXERA ANALYSIS

[13] *Department for Transport (2016), 'Web Transport Analysis Guidance', 28 July gov.uk/guidance/transport-analysis-guidance-webtag.*

The existing standby runway

5.6.12 Oxera has also carried out some preliminary analysis of the economic benefits of Gatwick with both the existing standby runway and main runway in operation in 2028, using the same methodology as that set out above.

5.6.13 This indicates a total employment of 91,000, with both the standby runway and main runway in operation, compared with 79,000 with the main runway only.

5.6.14 Similarly, total GVA is estimated to be £5.79bn compared with £5.06bn.

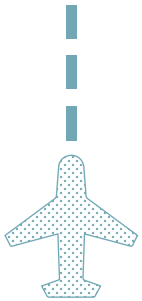
5.6.15 Net economic benefits in the Gatwick Diamond area are estimated to be £1.9bn compared with £1.7bn, and wider welfare benefits are estimated to be £60m compared with £44m.

5.6.16 This additional employment and economic activity generated by bringing the standby runway into regular use results from the higher capacity and passenger throughput it delivers along with associated increases in employment. We will carry out a more detailed assessment of these economic benefits of the standby runway scheme if it is taken forward to a DCO application.

An additional runway to the south

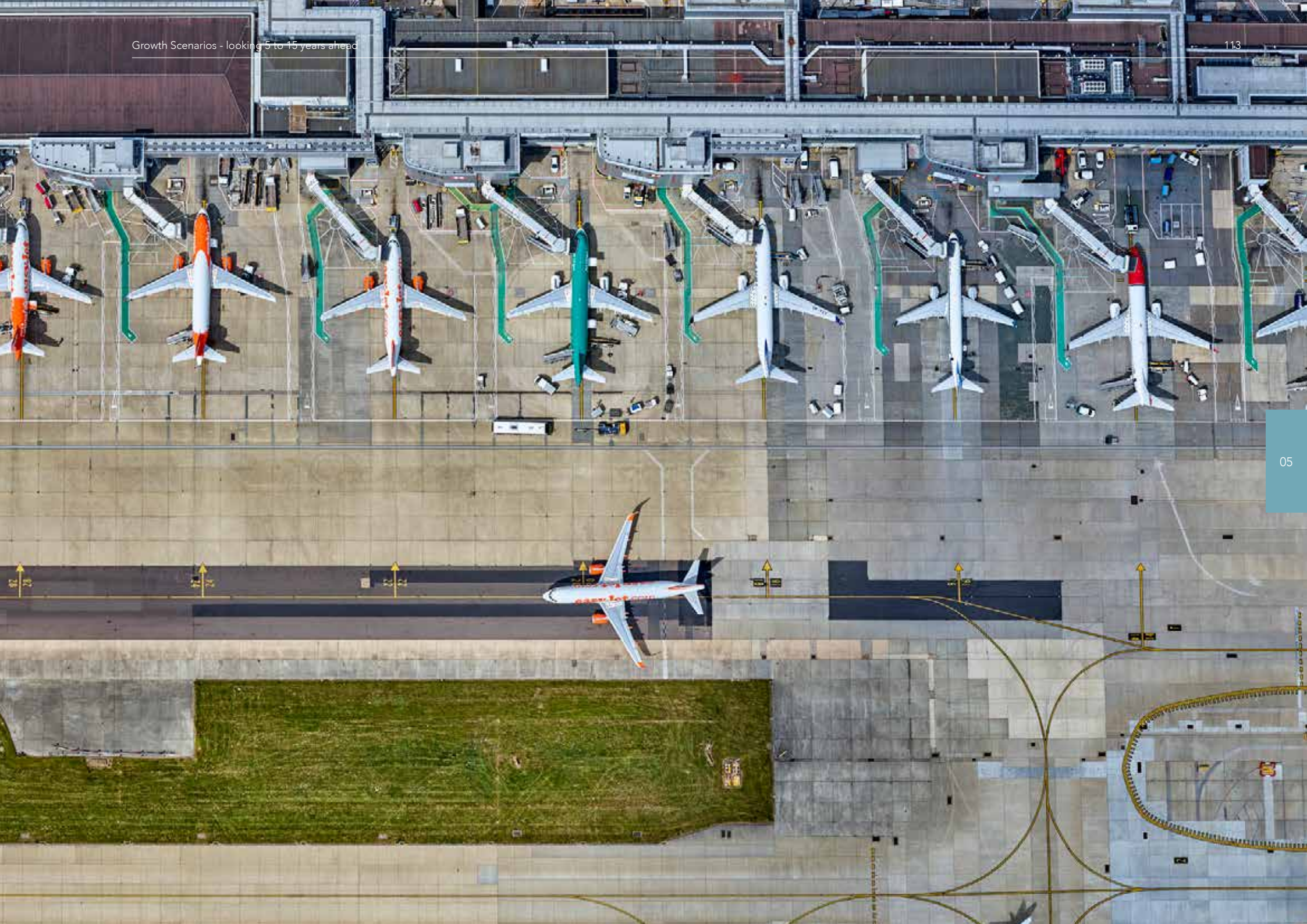
5.6.17 We commissioned an assessment of the economic benefits of adding an additional runway, as part of our work to assist the Airports Commission. This identified the following benefits:

- £79bn of economic benefits to the UK, in aggregate, over 60 year in present value terms, plus a further £10bn to 14bn of indirect competition benefits.
- £10bn to 14bn of benefits from direct competition resulting in lower fares, wider participation in the aviation industry, and greater levels of innovation from both airports and airlines.
- The revenue generated for the Exchequer, is expected to be £15bn of additional direct and indirect tax revenue at Gatwick. No Government subsidy is required for the additional runway.
- £28bn of wider economic benefits to the UK economy (i.e. benefits that are additional to the benefits to users and providers of aviation services). This value is considerably lower than benefits that have been attributed to the expansion of airport capacity by some other studies, principally because Gatwick has sought to avoid double counting any of the costs or benefits of additional airport capacity.
- In addition, the benefits from increased competition are likely to disperse throughout the London airport system, benefiting all passengers, even on routes where there is no direct competition.
- Employment at Gatwick is expected to grow based on an expanded volume of passenger traffic. With an additional runway the total projected airport employment would be 59,700.



59,700

total projected airport employment with an additional runway



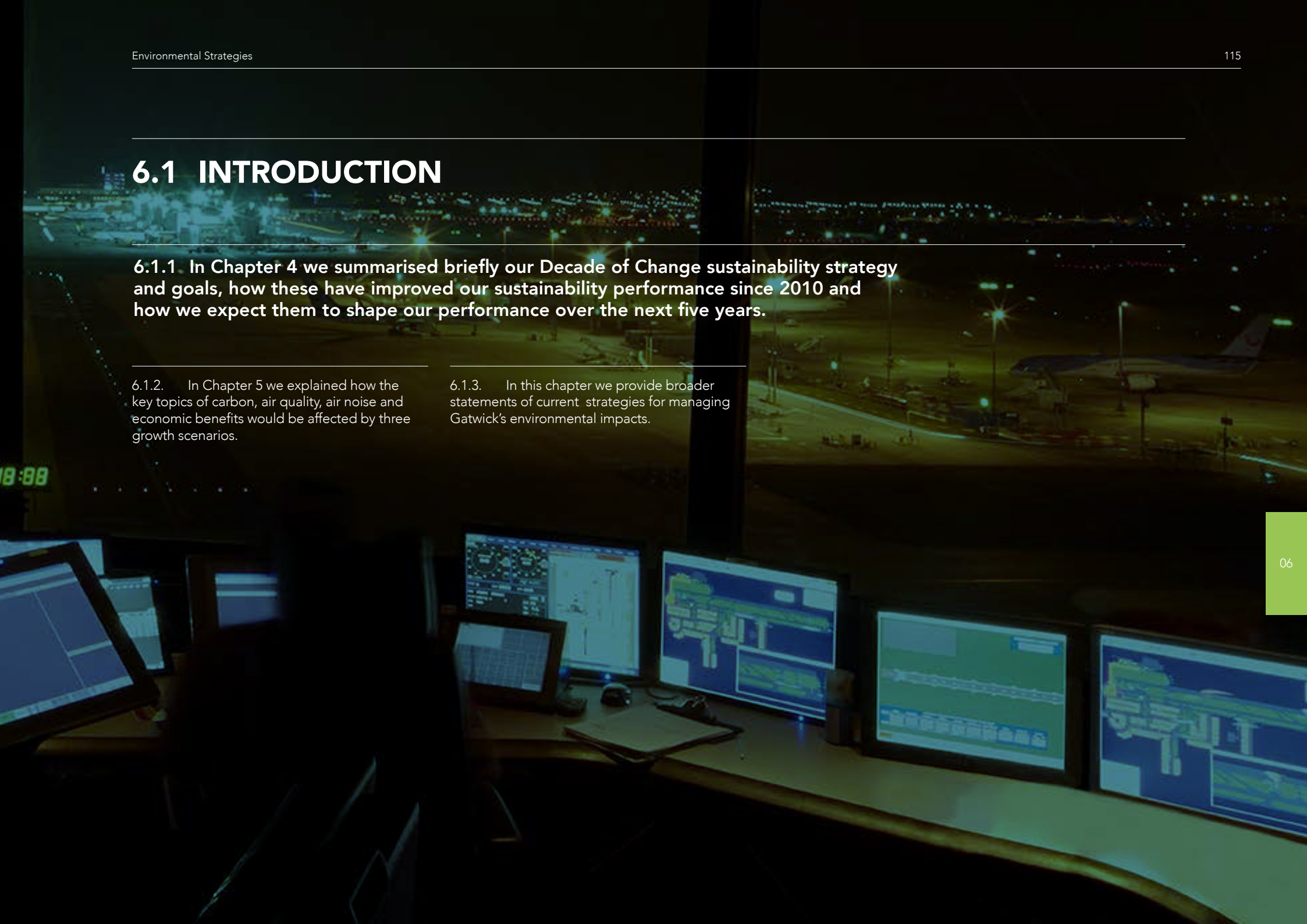
6 ENVIRONMENTAL STRATEGIES

6.1 INTRODUCTION

6.1.1 In Chapter 4 we summarised briefly our Decade of Change sustainability strategy and goals, how these have improved our sustainability performance since 2010 and how we expect them to shape our performance over the next five years.

6.1.2. In Chapter 5 we explained how the key topics of carbon, air quality, air noise and economic benefits would be affected by three growth scenarios.

6.1.3. In this chapter we provide broader statements of current strategies for managing Gatwick's environmental impacts.



6.2 CARBON AND CLIMATE CHANGE

Our Carbon Reduction Strategies

6.2.1 Our current carbon-reduction priorities include:

- Continue the evaluation of solar power and additional waste-to-renewable energy systems
- Expand collaboration with airport partners on low carbon initiatives
- Identify local carbon offsetting initiatives to complement our current international scheme (see below)
- Minimise embodied carbon by expecting lower-intensity carbon specifications from our supply chain.

6.2.2 We continue to participate actively in Sustainable Aviation (SA) which brings together major UK airlines, airports, manufacturers and air navigation service providers to meet the challenge of ensuring a sustainable future for the industry.

6.2.3 Sustainable Aviation's Working Group on Climate Change maintains a roadmap for future CO_2 emissions from UK aviation and explains how government and industry can achieve the target of reducing absolute CO_2 emissions to 2005 levels by 2050. The roadmap shows that UK aviation could achieve this reduction while more than doubling passenger numbers through operational improvements, airspace reforms, next and future generation aircraft, sustainable fuels and market-based measures.

6.2.4 SA's updated CO_2 roadmap was launched in December 2016 and is available online at sustainableaviation.co.uk/road-maps/. The next update is expected in December 2019.

Climate change

6.2.5 Climate change mitigation and adaptation continues to be a core consideration for all present and future planning at Gatwick. We will continue to review operational resilience procedures and contingency plans for incidents that may affect our services, including investment for severe weather events such as heavy rainfall, snow and ice. A range of risk reduction measures are available to address flood risk including the use of green drainage infrastructure (e.g. attenuation ponds, green roofs, etc.) to reduce run-off rates and volumes. These will be fully explored as projects are brought forward.

CLIMATE CHANGE MITIGATION AND ADAPTATION continues to be a core consideration for all present and future planning at Gatwick

6.3 AIR QUALITY

Our air quality management strategies

6.3.1 The continuous monitoring of air quality at the airport has been on-going since 1992 and has been carried out at various sites around the airport since the early 2000s. Off-airport monitoring is conducted in partnership with Reigate and Banstead Borough Council at three sites in residential streets near the airport.

6.3.2 Owing to the increased NO_2 recordings adjacent to the A23 in Horley and the Hazelwick Roundabout in Crawley, described in Section 4.5, we put in place enhanced monitoring programmes at these locations in 2016 and we are working with the Councils to understand what mitigation measures may be required.

6.3.3 We have a number of measures in place to contribute to improving the air quality at and around Gatwick including:

- Reducing use of aircraft auxiliary power units (APUs) through operating restrictions and the provision of Fixed Electrical Ground Power units on all new stands.
- Seeking to minimise on-airfield holding of aircraft through measures such as Airport Collaborative Decision Making.
- The opening of the 'Gatwick Direct' consolidated logistics centre in 2014, and the Gatwick recycling centre in 2016, has reduced inward and outward lorry journeys by 50%.
- Regular random checks of vehicles in use on the airfield to ensure compliance with emissions standards and age restrictions.
- Electrical charging points for electric baggage vehicles and airfield cars.
- An airport-wide plan for expanding electric vehicle infrastructure at Gatwick.
- An Airport Surface Access Strategy to further encourage the use of public transport for passengers and staff travelling to the airport.

6.4 AIR NOISE

6.4.1 Air noise is a term used to describe noise generated by aircraft that are either airborne or on the runway during the take-off or landing phases. Ground noise, which is addressed in the next section, deals with noise generated by aircraft when stationary or taxiing on the ground.

6.4.2 The management and control of air noise continues to be a high priority for us and over recent years we have evolved our approach to be more responsive to community concerns. Gatwick's independently-chaired Noise Management Board (NMB) is helping to shape our noise management strategy, through increased community engagement, and our Decade of Change target for noise is for us to be recognised as a best practice operator for noise management.

The Role of Government

6.4.3 The Government sets overall policy relating to the treatment of noise. The DfT's 'Consultation Response on UK Airspace Policy'[14] states the aim 'to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise as part of a policy of sharing benefits of noise reduction with industry in support of sustainable development.' Over the coming months Government and the CAA will be consulting on aviation and airspace modernisation strategies, and this will provide further policy guidance for airports.

6.4.4 Gatwick is a designated airport under Section 78 of the Civil Aviation Act (1982 and 2006) which gives the Secretary of State direct responsibility for the control of air noise around Gatwick. One aspect of this control is the setting of limits around night flights.

6.4.5 Night flights are defined as those occurring between 2300 and 0700 hours[15]. At Gatwick they play an important part of our airlines' operating models. This is because they allow routes to be flown which wouldn't otherwise be viable, for example by allowing aircraft to make several return flights every day – a vital way of ensuring the economic viability of the airlines' operations.

6.4.6 The number of permitted night flights, and a noise quota count based on the noise level of each aircraft, in the summer and winter seasons are set by the DfT and we rigorously enforce and publicly report on these quotas. The DfT periodically reviews the night flight restrictions and quotas in place. The most recent review, including a public consultation on options, was concluded by the DfT in July 2017 and the new rules apply from October 2017 to October 2022. A new lower noise category has been introduced to capture aircraft types which were previously exempt from the quota, whilst the noise quota count limits themselves have also been reduced.

6.4.7 Another aspect of the Government's role is the establishment of Noise Preferential Routes (NPRs) designed to avoid the over-flights of built-up areas by departing aircraft. Gatwick's NPRs have been in their present locations since the 1960s, providing predictability of departure routes. There are five NPRs for aircraft departing to the west and four for aircraft departing to the east of the airport.

6.4.8 The Government sets additional noise abatement procedures designed to avoid over-flights of built up areas on departure, minimum heights over built-up areas during the arrivals phase and the avoidance of reverse thrust use on landing during night-time operations. These are set out in statutory notices and are monitored and reported on.

[14] *'Consultation Response on UK Airspace Policy A framework for balanced decisions on the design and use of airspace': October 2017*
[15] *All times quoted are local, e.g. British Summer Time in the summer and Universal Time Constant outside of the summer.*

6.4.9 There are a set of departure noise limits in place at Gatwick, set by the DfT in 2001, and measured on the extended runway centre line. These are 87dBA during the night quota period (2330-0600), 89dBA during the night quota shoulder periods (2300-2330 and 0600-0700) and 94dBA during the daytime (0700-2300).

The Role of Air Traffic Control

6.4.10 On 1st March 2016, Air Navigation Solutions Ltd (ANS) took over responsibility for the local air traffic control (ATC) service provision at Gatwick Airport from NATS. ANS has responsibility for controlling aircraft in the immediate environs of Gatwick but NATS continues to have overall responsibility for ATC for arriving and departing aircraft and handles aircraft en-route within UK airspace.

6.4.11 For departing flights, pilots are directed to follow the appropriate route depending on their flight plan and destination. Once the aircraft reaches 3,000ft or 4,000ft (depending on the route), at any point along the NPR, the aircraft may be 'vectored' (i.e. directed) by air traffic controllers onto a more direct heading for their onward journey. This flexibility allows ATC to ensure that safe separations between aircraft are always maintained and can enable an early climb and more direct route to be flown, thereby reducing noise and CO_2 emissions. Aircraft may also be vectored away from a route at an earlier stage for safety reasons such as avoiding other traffic or adverse weather.

6.4.12 All arriving flights are vectored onto the final glide-path which forms a virtual extension of the runway centreline from the touch down point at the runway threshold with an angle of approach of 3 degrees. The point at which the aircraft joins this glide-path, and the route taken to reach the joining point, depends on a number of factors. These include the approach direction, the weather and the location of other aircraft in the vicinity.

6.4.13 Continuous Descent Approach (CDA) is a technique for reducing the noise produced by arriving aircraft. It works by ensuring an optimal continuous descent rate, keeping aircraft at higher altitudes for longer and reducing the need for changes in thrust settings which can cause annoyance to people overflown. There is a voluntary code of practice for CDA, and levels of CDA compliance are publicly reported. Gatwick has seen CDA compliance levels of around 90% and is consistently one of the best performing airports in the UK.

6.4.14 A Gatwick Noise Management Board work plan action, and now a Sustainable Aviation (SA) led project, is to improve noise mitigation for arriving aircraft through the development of a low noise approach metric to complement the current CDA definition. This initiative can be delivered only with wholehearted cross-industry endorsement and with extensive support from the CAA to ensure effective engagement at both UK and European levels. It is expected that this will lead to the evolution of CDA procedures and reduce arrivals noise.

Gatwick has seen CDA compliance levels of around 90% and is consistently one of the best performing airports in the UK

Gatwick's Noise Action Plan

6.4.15 Under European law (Environmental Noise Directive (2002/49/EC)), Gatwick Airport is required to publish a Noise Action Plan every five years. This plan provides a detailed description of the statutory and voluntary noise management controls to manage noise issues and effects arising from aircraft departing from and arriving at the airport. Our current plan was published in 2013 and will be replaced by a revised plan – once it has been adopted by the Secretary of State – in 2019. Our performance against plan, the current 2015-2018 version of which is available via the Gatwick website, is assessed and reported quarterly and annually via the Noise and Track Keeping Monitoring Advisory Group (NaTMAG).

6.4.16 In finalising our latest draft Noise Action Plan, we consulted with GATCOM and our local authorities, and we also received feedback from our community noise groups represented on the NMB. The Noise Action Plan also now includes the contribution to noise management realised through the NMB and its work plan.

6.4.17 The Noise Action Plan gives a comprehensive description of the noise management strategies adopted by Gatwick. The draft Noise Action Plan is reflective of the feedback received during the consultative phase and pulls together Gatwick and NMB initiatives to form the core of the Plan. The activities included aim to reduce noise at source, mitigate the impact of noise on the ground and improve the availability of our noise information. Examples of these initiatives are:

- Implementing a voluntary ban on Quota Count 4 aircraft at night[16]
- Expanding the Community Noise Monitoring Scheme with additional noise monitoring terminals, the intention of which is to further aid our collective understanding of the noise climate around the airport.
- Reviewing our departure noise limits and increase the fines that are levied against airlines that breech these. All fines will be passed onto the Gatwick Airport Community Trust.
- Increasing the availability of airspace and noise information to the wider community by revising our website. Implementing a programme that will rank our airline partners in relation to their overall performance for a range of noise and any other appropriate topics.
- Aiming to develop new noise metrics and reporting to complement the current noise contours and measure our future noise performance. This work will be used to more precisely describe outcomes to support the END Noise Action Plan.
- Fully supporting the re-design of the London airspace to eliminate chokepoints, alleviate areas of intensive aircraft concentrations and reduce the number of people affected by noise. Whilst ensuring that local communities remain fully informed of the process.

6.4.18 A number of the Plan's actions will evolve over time but we are committed to continuing to work with our industry partners, community groups, elected representatives and the NMB to identify and implement measures intended to improve the noise climate for communities surrounding the airport.

Noise Insulation

6.4.19 Our Noise Insulation Scheme was updated in 2014 to increase the area in which noise insulation can be offered. Figure 6.1 shows the area of the scheme. The scheme is based on the Leq 16 hr 60dB noise contour but has been extended a further 15km further east and west beyond these contours. Over 2,000 homes are now covered by the scheme. Home owners can apply for up to £3,000 towards improved glazing for their windows and doors as well as loft insulation. The scheme goes well beyond the requirements of the APF and is more generous than those of many UK airports.[17] Nonetheless, our Noise Action Plan commits to a further review of the scheme, including the noise insulation package offered.

Local Noise Governance

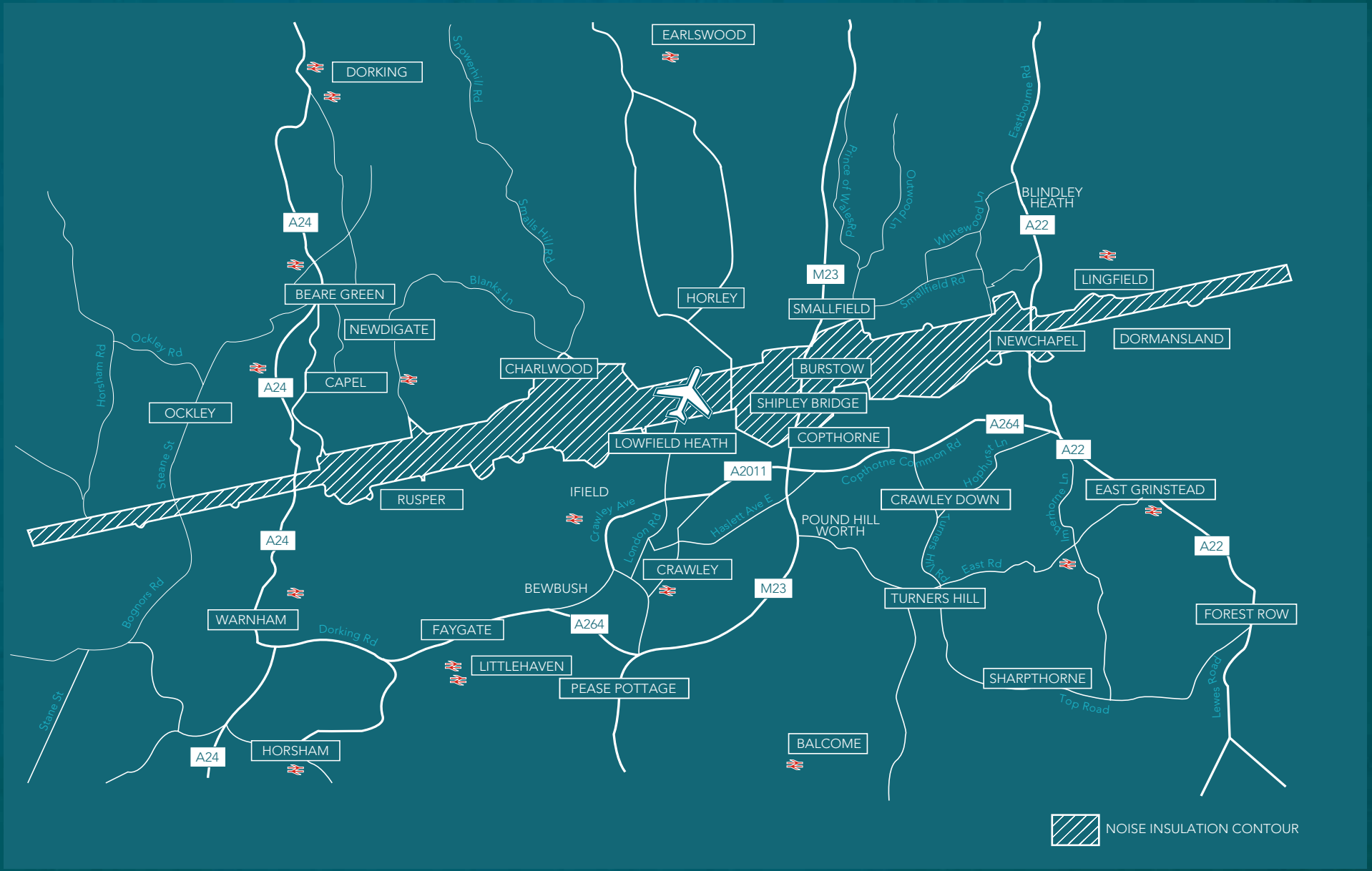
6.4.20 The Airports Act (1986) requires every UK airport to have an independent airport consultative committee; Gatwick's is known as GATCOM and meets quarterly in a public forum. There are also sub groups that deal with specific technical issues including noise management.

6.4.21 The Noise and Track Keeping Monitoring Advisory Group (NaTMAG) is a technical group that has responsibility for specific noise management issues and provides oversight of Gatwick's Flight Performance team. The group consists of representatives from NATS,

[16] *Quota Count 4 is a CAA definition for aircraft with a noise classification of between 96 and 98.9 EPNdB*

[17] *The APF requires noise insulation at Leq 16hr 63dB. The 15km extension of the qualifying zone includes homes at levels below Leq 16hr 60dB.*

FIGURE 6.1: GATWICK NOISE INSULATION SCHEME BOUNDARY



DfT, airlines, GATCOM and Local Authorities, including environmental health officials. It meets quarterly and reports to GATCOM on the environmental performance of the airport for each period.

6.4.22 The Gatwick Noise Monitoring Group (GNMG) is a sub-group of NaTMAG which deals specifically with all aspects regarding the airport's noise monitoring program. This includes the siting of mobile noise monitors, reviewing recorded data and reporting to NaTMAG on noise performance. The group meets quarterly and includes representatives from the Local Authorities.

6.4.23 The Noise Management Board (NMB) was established in spring 2016 to develop, agree, oversee and maintain a co-ordinated noise management vision and strategy for Gatwick. The NMB is made up of a wide range of industry experts and local stakeholders, under the guidance of an independent Chair. The initial focus of the NMB was the oversight of the implementation of the recommendations of the Independent Arrivals Review. The NMB scope of responsibility has since evolved and it now shapes its work plan to encapsulate arrivals and departures noise mitigation related activities. The Board meets quarterly and is complemented by NMB workshops at intervening 6 week intervals that focus on specific subjects that have been identified as priority issues by the NMB.

6.4.24 Each year we host a public Airspace/ NMB seminar that brings together Gatwick's management team with responsibility for airspace and noise and the NMB, along with representatives from NATS, ANS, airlines and industry experts to discuss with members of the public and community representatives a wide range of airspace and noise issues.

6.4.25 Our dedicated Flight Performance Team work closely with the various noise management fora and provide data to airlines and the public. The team also handles aircraft noise complaints and noise related enquiries. In support of its responsibilities the team manages a web based tool (http://noiselab.casper.aero/lgw/) which provides information to the public and industry on aircraft operations, noise monitoring data, and complaints and provides background material on aircraft noise and its management.

Conclusion

6.4.26 We have a mature and comprehensive approach to noise management that complies with Government guidance and aspires to be best in class. It is underpinned by a Section 106 Legal Agreement with West Sussex County Council and Crawley Borough Council, and laid out in more detail in the airport's Environmental Noise Directive Noise Action Plan[18].

6.4.27 In the last two years we have improved our engagement with noise-affected communities through the work of the Noise Management Board that draws together Community Noise Groups, elected representatives, the airport noise management team and industry representatives on a work programme steered by the NMB and reported openly through detailed documentation, presentations and working groups

6.4.28 Actions to reduce noise impacts can take time to implement, but two NMB activities have already significantly reduced noise impacts from arrivals: moving the Instrument Landing System joining point to increase dispersal, and encouraging the implementation of a Fuel Over Pressure Protector (FOPP) modification to Airbus 320s that has removed their distinctive whining noise.

6.4.29 The draft Gatwick Noise Action Plan provides a comprehensive view of our planned noise management mitigations. Our plans aim to reduce noise at source, mitigate the impact of noise on the ground and improve the availability of our noise information to our communities.

6.4.30 In the longer term, further and potentially significant noise reduction opportunities may result from projects being considered, and initiatives that may be pursued, under the CAA's Airspace Modernisation Strategy. When this is finalised, we will look to see how Gatwick can make full use of Government and CAA sponsored endeavours to make procedural and airspace design changes that secure noise benefits for local communities.

[18] *Gatwick Airport Environmental Noise Directive Noise Action Plan 2010-2015 (June 2010).*

6.5 GROUND NOISE

Our ground noise management strategies

6.5.1 There are a number of ways in which we are currently managing, and seeking to reduce the level of ground noise caused by the airport's operations.

- There are a number of noise bunds around the northern perimeter of the airport. They perform an important function in visually screening the airport but also provide a noise mitigation function. There is also a 'noise wall' to the north of Pier 3 which plays an important role in reducing noise levels in the nearby residential areas.
- Through our Decade of Change action plan, we install fixed electrical ground power (FEGP) services to all new passenger stands to provide an alternative to aircraft running APUs whilst parked on stands.
- The use of compliant, mobile ground power units (GPUs) is restricted to use only when FEGP services are unavailable.
- We have in place strategies to reduce the time spent by aircraft holding on taxiways, or on the runway, through initiatives such as Airport Collaborative Decision Making (ACDM). This will improve punctuality but will also reduce engine emissions and ground noise levels.
- We are also seeking to avoid, or reduce, congestion on the taxiways which will have a beneficial effect on ground noise.
- We seek to ensure that all fixed plant and machinery complies with the best available acoustics standards.
- There are special procedures in place to manage the ground testing of aircraft engines. This can be done only at designated locations, and the frequency of testing is carefully monitored.

6.5.2 We will continue to encourage airlines to operate the latest generation of aircraft which have been proven to be quieter in flight. While there is as yet insufficient data on their ground noise emissions to test how the ground noise footprint will be affected, it is likely that there will be positive benefits.

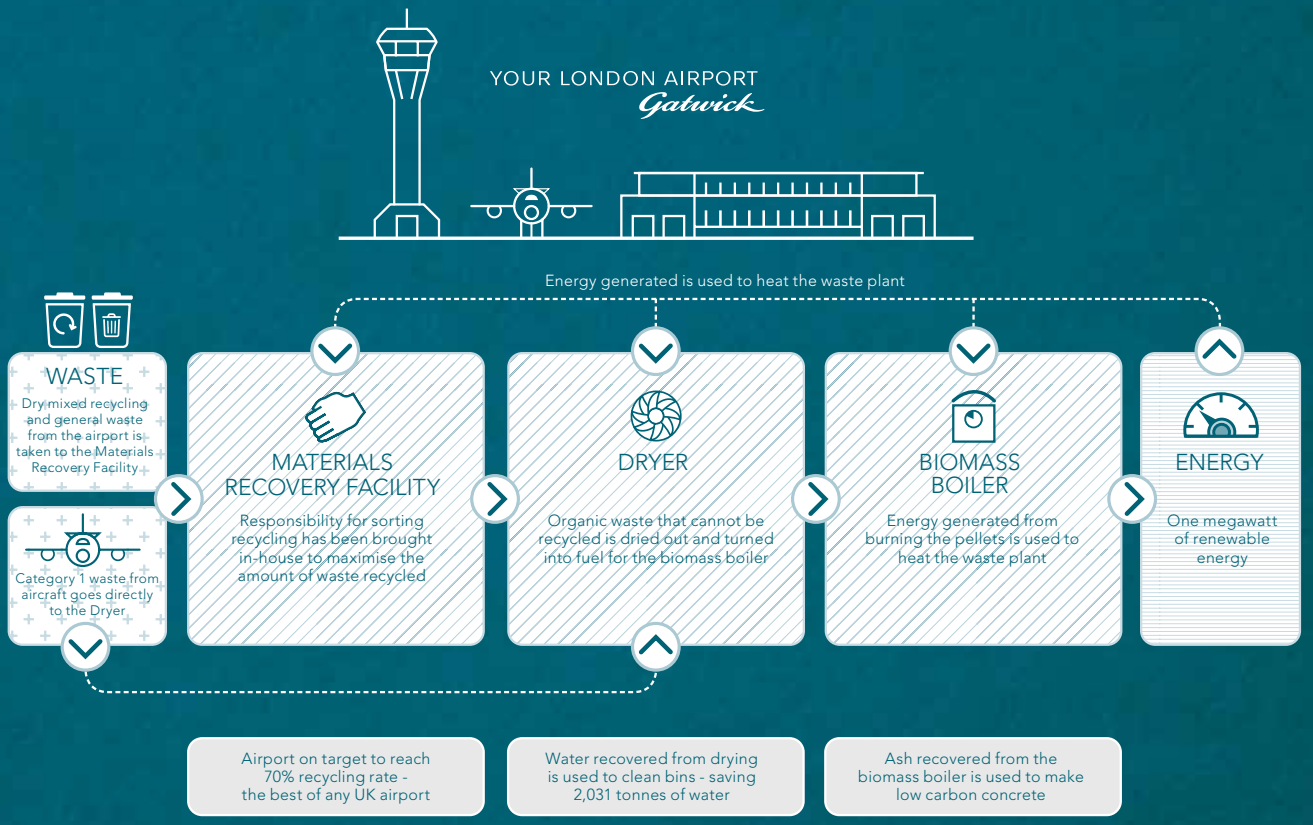
6.6 WASTE

Our waste management strategies

6.6.1 Following a review of the physical waste management processes across the airport, we know that our operational principles are working well to enhance our recycling efforts. Our most recent benchmarking analysis has shown that current waste figures are significantly lower than we forecast in our last master plan. This reduction in waste volume can be attributed to the success of our existing engagement programmes, and collaborative working practices with all stakeholders.

6.6.2 In 2016 we announced the world's first on-airport plant for processing aircraft cabin waste into renewable energy. This will help us reduce the amount of off-site incineration. Figure 6.2 highlights this new waste management process. It indicates how our recycling targets will be achieved with greater separation of general and mixed recyclable waste via the new picking line. As part of this process there are 50% fewer vehicle movements, thereby reducing carbon dioxide emissions. The condensate recovery process could reduce water consumption by 2 million litres per year and the residual biomass ash can be used to manufacture low carbon concrete. The biomass combustion system itself can generate up to 1 MW of renewable energy, which will be supplied directly to the airport.

FIGURE 6.2: GATWICK'S WASTE MANAGEMENT PROCESS



6.7 ENERGY

Our strategies for reducing energy consumption

6.7.1 A number of measures identified in our 2015 Energy Savings Opportunity Scheme (ESOS) report have been completed. This includes the completion of the work to upgrade all aircraft stand lighting to LED, the upgrade of all external car park lighting to high efficiency induction lighting, and the upgrade of North Terminal immigration hall lighting to LED.

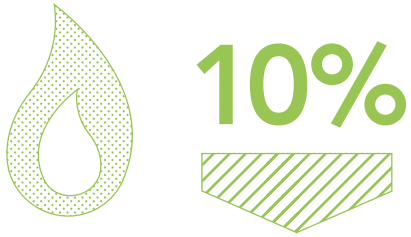
6.7.2 We have also introduced more energy-efficient lighting within the terminals. Both terminal's baggage reclaim halls and North Terminal check-in area were completed during 2017.

6.7.3 We will continue to explore the use of energy generation technology, and will consider proposals for off-site renewable electricity supplies with the potential to supply a larger proportion of our demand.

6.7.4 We have introduced an on-site energy from waste facility, which takes organic waste from the airport to be dried and processed to generate heat. We are evaluating the use of this heat for use within Terminal buildings and other facilities. The catering-waste boiler (Category 1 waste) will have a heat capacity of 800kWh and this could deliver approximately 3,000MWh of heat generation, further reducing gas demand at the North Terminal.

6.7.5 We are currently looking to de-centralise some of our central heating network. In 2014 the South Terminal was identified as a suitable scheme, and in 2016 gas infrastructure works were completed and the first de-centralised plant room was commissioned. Through boiler efficiency improvements alone this could deliver an estimated 10% reduction in gas consumption. We expect that further plant rooms will be de-centralised over the coming years.

6.7.6 Our Energy, Carbon and Metering (ECM) Standard, updated in 2016, sets out our expectations for how lower energy consumption is to be incorporated in all construction and asset replacement projects. For example all refurbishment or improvement projects are required to demonstrate a minimum of 20% reduction in energy consumption, with an objective of greater than 40% in the majority of cases.



Reduction in gas consumption through boiler efficiency improvements

6.8 WATER

Our water-use reduction strategies

6.8.1 We have introduced automatic read meters across the airport to improve our monitoring of water use. These meters record water consumption every 15 minutes over 97% of the airport, 24 hours a day. Consideration can also be given to improving the monitoring of wastewater flows in the main sewage pump stations and main gravity outfall sewer.

6.8.2 Gatwick has an ongoing programme to identify and stop leaks in the airport-wide water supply system and this has been the main contributor to the reduction in water consumption over recent years. Records show that these investigations can identify significant savings.

6.8.3 One of the main areas where recycled water is used, in place of potable water, is for the airfield fire ring main, which is filled with pressurised grey water from ponds D and E. Firefighting is generally undertaken using fire tenders which have potable water in their tanks. However grey water can be used to replenish the fire tenders should they exhaust on-board supplies.

6.8.4 Potable water is however used for aircraft de-icing and vehicle wash down. There is limited scope to use recycled water because good quality water is required for mixing de-icing sprays for aircraft, and similarly clean water is required for washing down. However in 2015 approximately 20% of water was recovered and re-used.

6.8.5 Although there are practical constraints to retrofitting rainwater harvesting into existing buildings, we look for opportunities to do this in new-build projects. For example the new Airfield Operations Building uses rainwater for toilet flushing and other uses, not requiring potable water.

Our water quality strategies

6.8.6 Gatwick's operation generates large quantities of wastewater which requires treatment and disposal. The airport also has the potential for producing large volumes of rainfall runoff from the paved surfaces such as the runway, taxiways and car parks. Accordingly we have controls in place to manage the risk of water course pollution or flooding. As a result, Gatwick has not been responsible for any compliance breaches during the Decade of Change period, nor has it been prosecuted for infraction of its discharge consent.

6.8.7 Foul water is sent directly to the Thames Water, Crawley Sewage Treatment Works (STW) to the south east of the airport or Horley Sewage Treatment Works (STW) to the north east of the airport. The key features of the Gatwick surface water management system are shown in **Plan 7**.

6.8.8 All rainfall runoff from Gatwick drains to one of three watercourses: Crawter's Brook, Gatwick Stream and the River Mole. Consent to make these discharges is granted by the Environment Agency. The quality of water that leaves Gatwick is monitored at 16 locations providing a clear understanding of the quality of water leaving the airport.

6.8.9 The two key factors that affect water quality are the amount of de-icer application (which is determined by the winter temperature) and the volume of rainfall. When colder weather predominates, more de-icer is applied but this can be treated and released off-site in a controlled manner.

6.8.10 The predicted increase in aircraft movements and the planned increase in the amount of airfield hardstanding is likely to increase the amount of de-icing chemicals used. A number of options are being considered to manage this, including:

- Increasing the recovery of used aircraft de-icer.
- Use of less polluting potassium acetate-based de-icers (ECO_2) instead of glycol-based de-icers (100% replacement).
- Increased capacity of pollution lagoons and on-site treatment.

6.8.11 All operational areas where other chemicals may be present, e.g. firefighting chemicals and rubber removal agents, drain to ponds where these pollutants can be intercepted and, where necessary, transferred to the Crawley STW for further treatment.

6.8.12 In order to reduce the risk of impacting water quality, we constructed a new pollution lagoon to increase the storage capacity for polluted water needing treatment by the Crawley STW by 50%. In addition, improvements were made to Pond D in 2014, preventing water from the River Mole entering the pond during high river flow conditions.

Our flood risk management strategies

6.8.13 We have undertaken hydraulic modelling of the surface water drainage and river network to better understand the risk of flooding. Based on this Gatwick is considered to be at risk of river flooding events that are predicted to occur on average once every 50-75 years. The location at greatest risk of river flooding is the South Terminal from the Gatwick Stream.

6.8.14 The airport is also at risk from surface water flooding events (e.g. those caused by heavy local rainfall) predicted to occur on average once every ten years with the location at highest risk being the North Terminal.

6.8.15 To address the risks of flooding we have undertaken a number of measures and projects that contribute to the mitigation of flood risk at Gatwick including:

- Upper Mole Flood Alleviation Scheme (UMFAS): A scheme to which we contributed approximately £4 million, which has reduced the flood risk to South Terminal and also protects around 1,300 local properties.
- Gatwick Stream Flood Alleviation Scheme (GSFAS): This provides off-line storage when the flow in the Gatwick Stream exceeds the capacity of the culvert adjacent to South Terminal. We invested approximately £12 million in 2014 to provide around 186,000m^3 of flood attenuation storage.
- The major refurbishment of Pond D and associated infrastructure was completed in 2014 including a new pollution lagoon near the Crawley STW, increasing the capacity of the surface water drainage system and reducing frequency of runoff discharging to the River Mole.
- Flood protection to key assets including sub-stations following the 2014 McMillan Report[19].
- Asset and condition assessments of key surface water systems have been completed and work programmes prioritised.

6.8.16 We are considering a number of further opportunities to manage flood risk at the airport and within the local community including:

- Flood defences to protect the airport and local community from flooding from the Gatwick Stream and the River Mole.
- Incorporation of surface water attenuation storage for all new development.
- A review of the operation of the surface water drainage network, to rationalise the system.
- Consideration of the use of SUDS measures, where compatible with aerodrome safeguarding, such as green roofs to reduce runoff from new development.
- Consideration of sacrificial storage of flood water above ground in non-critical areas of the airport.
- Collaboration with the Environment Agency to develop future flood alleviation schemes.
- Increasing the pump outputs from Pond D.

We invested approximately £12 million in 2014 to provide around 186,000m^3 of flood attenuation storage

[19] *Disruption at Gatwick Airport, Christmas Eve 2013, Report by David McMillan to the Board of Gatwick Airport Limited*

6.9 LANDSCAPE AND BIODIVERSITY

6.9.1 To manage, safeguard and protect our green spaces and to enhance the ecological quality of the overall estate, we implement Biodiversity Action Plans (BAP). These plans are verified by the Wildlife Trust Biodiversity Benchmark, and implemented through our landscape contractor and our close working relationship with the Gatwick Greenspace Partnership, which we support through our Section 106 agreement.

6.9.2 The Gatwick Greenspace Partnership plays an important role in our landscaping and biodiversity efforts. It works to benefit the countryside, wildlife and the people in communities around the airport. It aims 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.

6.9.3 We recognise the educational and recreational opportunities created by our green spaces, hosting regular visits from universities and schools. We also hold family and staff events and provide volunteering opportunities for those wanting to assist in maintaining and improving the environment.

6.9.4 In 2016 Gatwick commenced the development of a Landscape Strategy to align with the requirements of our Section 106 agreement with the Local Authorities. This 5-year strategy, which includes a Landscape Character Assessment, covers all of the land owned by Gatwick including the two BAP areas. Its purpose is to inform future planning policies for airport development, provide recommendations for landscape management and to promote public and airport staff awareness of the landscape character and its importance for conservation.

Our strategies for mitigating the impacts of growth

6.9.5 We remain committed to maintaining and increasing the biodiversity value of the airport and will manage and mitigate the impacts of the developments contained in this draft master plan. As a result we will, as far as possible, design our projects to avoid impacts on the existing landscape and biodiversity assets while identifying opportunities to enhance these assets.

6.9.6 To minimise any adverse impacts, a number of strategic biodiversity and landscape objectives have been developed. These would be considered while taking into account airport safeguarding and other operational requirements. These include:

- Respecting the qualities of the biodiversity and landscaped areas and retaining assets where possible;
- Providing connectivity for habitats and continuity of the landscape framework around the airport;
- Providing a coordinated approach to the provision of green infrastructure to achieve biodiversity benefits; and
- Integrating green spaces and access opportunities, linking these where possible, to existing public rights of way.

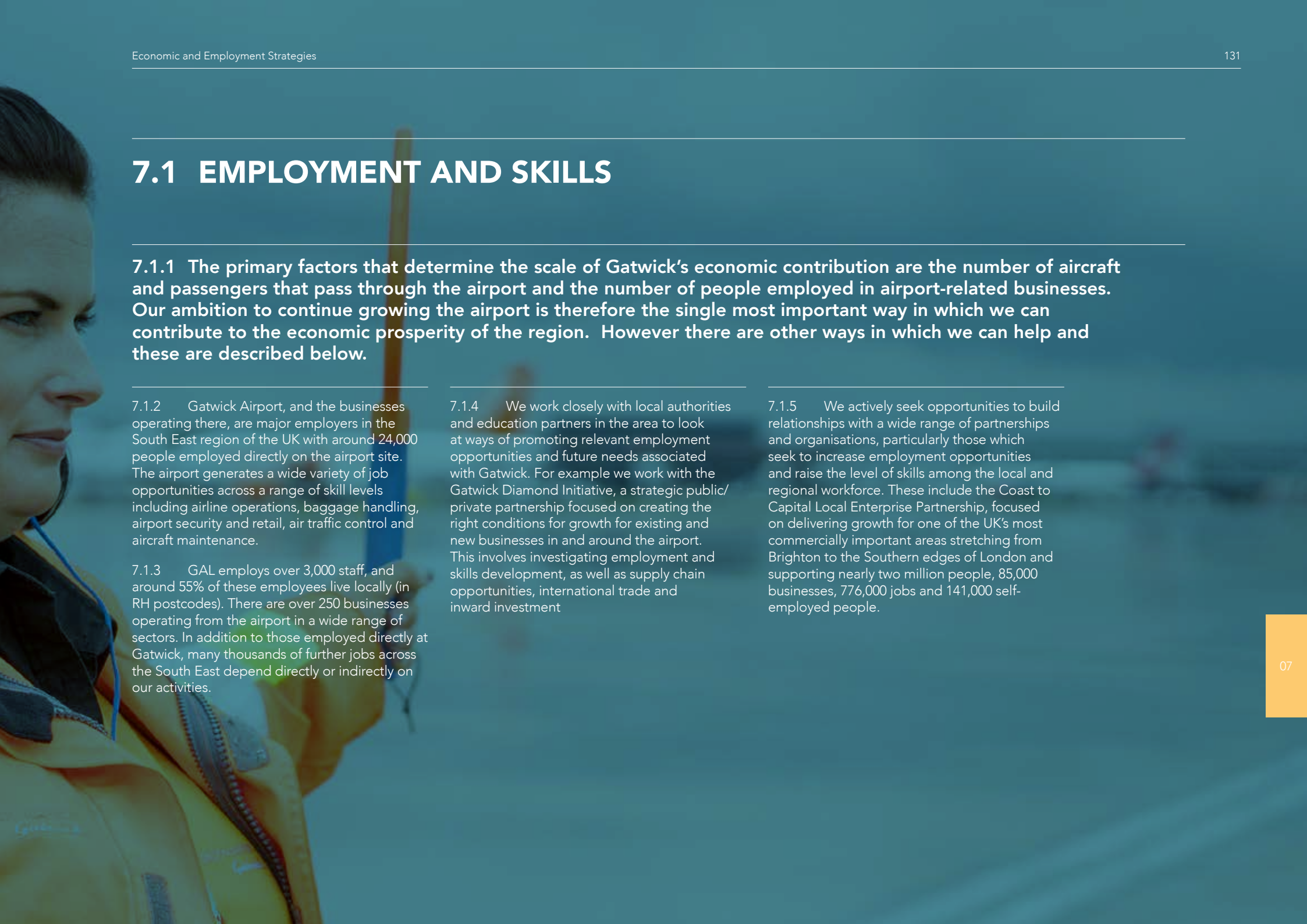
6.9.7 Some specific examples of improvements which we will consider alongside the development proposals are shown below:

6.9.8 Planting within our green spaces should incorporate appropriate and predominantly native species. Where possible the planting should aim to link up green spaces within the airport and connect with off-airport road and rail corridors and the surrounding rural landscape. However in designing planting schemes it is important that we consider how the natural landscape could attract bird species that might endanger the safe operation of the airport.

6.9.9 There is potential to improve the physical structure of watercourses and related wildlife habitats and corridors, at the same time as increasing flood storage capacity. This could include the ongoing management of the River Mole to include native planting, removing invasive species such as Himalayan Balsam, and enhance the aquatic ecology and fish populations.

6.9.10 Retention, improvement and maintenance of the public right of way network will ensure that communities around Gatwick can continue to enjoy access to valuable landscape resources around the edge of the airport. In the design of public spaces, we believe that the use of appropriate materials and street furniture can help to enhance the experience of our passengers, staff and the local communities. Enhanced planting in built-up areas to improve biodiversity will be promoted through Gatwick's Landscape Strategy.

7 ECONOMIC AND EMPLOYMENT STRATEGIES



7.1 EMPLOYMENT AND SKILLS

7.1.1 The primary factors that determine the scale of Gatwick's economic contribution are the number of aircraft and passengers that pass through the airport and the number of people employed in airport-related businesses. Our ambition to continue growing the airport is therefore the single most important way in which we can contribute to the economic prosperity of the region. However there are other ways in which we can help and these are described below.

7.1.2 Gatwick Airport, and the businesses operating there, are major employers in the South East region of the UK with around 24,000 people employed directly on the airport site. The airport generates a wide variety of job opportunities across a range of skill levels including airline operations, baggage handling, airport security and retail, air traffic control and aircraft maintenance.

7.1.3 GAL employs over 3,000 staff, and around 55% of these employees live locally (in RH postcodes). There are over 250 businesses operating from the airport in a wide range of sectors. In addition to those employed directly at Gatwick, many thousands of further jobs across the South East depend directly or indirectly on our activities.

7.1.4 We work closely with local authorities and education partners in the area to look at ways of promoting relevant employment opportunities and future needs associated with Gatwick. For example we work with the Gatwick Diamond Initiative, a strategic public/private partnership focused on creating the right conditions for growth for existing and new businesses in and around the airport. This involves investigating employment and skills development, as well as supply chain opportunities, international trade and inward investment

7.1.5 We actively seek opportunities to build relationships with a wide range of partnerships and organisations, particularly those which seek to increase employment opportunities and raise the level of skills among the local and regional workforce. These include the Coast to Capital Local Enterprise Partnership, focused on delivering growth for one of the UK's most commercially important areas stretching from Brighton to the Southern edges of London and supporting nearly two million people, 85,000 businesses, 776,000 jobs and 141,000 self-employed people.

EDUCATION

7.1.6 Our education programme aims to inform, inspire and invest in young people, opening up the world of opportunity that the airport offers to everyone and helping them to develop the right skills for the right job. For example our exciting new programme, Learn Live, broadcasts Gatwick Airport live into classrooms across the country, showcasing key airport themes and careers and providing a live question and answer session with airport colleagues. We also collaborate with other local programmes working with young people to raise aspirations and enable them to achieve their full potential.

7.1.7 Competencies in science, technology, engineering and maths are critical, not only to our business, but are seen as one of the accelerating forces for economic growth across the UK. We want to be at the forefront of inspiring young people to join us and to be part of our continuing future growth and success. For example our sponsorship and participation in Crawley STEMfest and the Big Bang South East, help us to reach 200,000 students across the region.

7.1.8 For many years we have enjoyed strong relationships with some of the principal higher education institutes across the South East region, in their role as potential providers of professional and technical staff from amongst their highly talented students. Gatwick continues to work with the University of Brighton, University of Sussex, University of London and Imperial College London to support their successful graduate engineer programme. Over the last 2 years, Gatwick has employed three graduates annually with the intake being increased to six in 2018. The graduates all work on a fully integrated programme gaining exposure to the programme of works in our Capital Investment Programme, including a mentoring programme which ultimately helps participants to reach chartered status while working at the airport.

7.1.9 Our engineering apprenticeship programme has been running for over 40 years and continues to provide outstanding opportunities for local people to enter a skilled career. Over the last 40 years, some 270 apprentices have been taken on at Gatwick. Many of these people still work at the airport in engineering roles or are now working in senior positions at the airport.

Our sponsorship of and participation in Crawley STEMfest and Big Bang South East, help us reach 200,000 students across the region

OVER THE LAST 40 YEARS SOME

270 APPRENTICES

HAVE BEEN TAKEN ON AT GATWICK

7.2 SUPPORTING LOCAL BUSINESS AND ECONOMIC GROWTH

7.2.1 As a major economic driver in the South East the airport has an important role to play in supporting local businesses either directly through its supply chain, or indirectly through initiatives which encourage business and economic growth.

7.2.2 Our business engagement programme includes memberships, partnerships and participation in regional activities, aimed at ensuring that Gatwick continues to play a positive, active and valued role in the regional economy. Throughout the year we participate in events and activities with local business and networking groups such as Gatwick Diamond Business and the Chambers of Commerce in Sussex, Surrey and Kent.

7.2.3 We support business innovation and excellence through sponsorship of awards programmes, for example the Gatwick Diamond Business Awards. We also seek opportunities to directly sponsor programmes which benefit local business growth, such as networking events and conferences. These events help to bring the business community together to network, share intelligence, debate key issues and generate new business. Examples include the Big Breakfast networking events which, in partnership with the Coast to Capital LEP been extended successfully from Croydon events into Sussex, Surrey and Kent. We have also sponsored and participated in regional business conferences such as the Gatwick Diamond Speakers Conference and the Sussex Economic Forum.

7.2.4 In recognition of the significance of Gatwick's role in the regional economy, we actively engage in local and regional public/private partnerships, such as Gatwick Diamond Initiative; the Coast to Capital LEP; and the Greater Brighton Economic Board. Such partnerships provide an important opportunity for us to understand local and regional issues and priorities, which helps to inform our activities. Where possible we will seek opportunities to support events and programmes of work with these partners such as the Gatwick Diamond Economic Growth Forum which Gatwick sponsor and provide senior level participation at in the form of keynote speakers and panel members.

7.2.5 We have also participated in Crawley Borough Council's Local Economy Action Group for over a decade. The Gatwick Growth Board commissioned research into Gatwick's role in the national, regional and local economy; its contribution to the visitor economy; to trade and investment; as well as to connectivity. This work, undertaken between 2016 and 2018, has helped to bring together local and regional partners around these issues, enabling us to identify areas of joint working, for example in supporting the growth of the visitor economy.

7.2.6 As well as the significant contribution that airport employment makes to the economy, the airport supply chain also plays a very important role. In 2017 we spent £132.8m with local and regional suppliers.[20] This reflects our active focus on improving opportunities for local business to supply to Gatwick.

7.2.7 We are sponsoring partners for the Gatwick Diamond 'Meet the Buyers' event, and have been actively involved since 2002, working collaboratively with regional partners to create new business opportunities for local companies. The programme provides opportunities for local suppliers to meet with larger buying organisations, supported by a programme of free seminars to help local businesses to develop and improve their skills and achieve successful sales outcomes.

7.2.8 As the second largest international airport in the UK, with a strong European route network and serving over 60 long-haul destinations, Gatwick provides a convenient and affordable gateway to trading opportunities for local businesses. We work with local and regional partners to support and encourage international trade. For example the Meet the Buyer Programme has been expanded to include an international trade element. We have also hosted Take Off 2017, a one-day conference bringing together a wide range of speakers to inspire and engage local businesses in how to grow their business abroad.

[20] *Suppliers within the BN,CR,GU,KT,RH,TN postcodes*

8 COMMUNITY ENGAGEMENT STRATEGIES

8.1.1 We value strong and constructive relationships with our neighbours in the local community and across the region, built on openness and trust. We therefore aim to keep these communities informed about what we are doing and listen to their concerns and ideas for improvements.

8.1.2 We recognise that for Gatwick to continue to grow in the future, strong relationships with local community organisations are fundamental. We believe that a transparent and inclusive approach on issues relating to the airport's operations is vital to ensuring that any concerns about future development can be addressed at the earliest opportunity. That said, we also recognise that the operation of a major international airport is always going to be unpopular with some people and that, despite our best efforts to engage with communities, Gatwick is no exception to this rule.

8.1.3 We are proud of our strong links, established over more than four decades, with a wide range of community organisations across London and the South East including many civic and regional bodies, residents and wider interest groups. These relationships are particularly important as Gatwick continues to grow.

HOW WE ENGAGE

8.1.4 One of the most important areas where we engage with local communities is on the issue of noise. We do this through a number of channels; our Consultative Committee (GATCOM) where we provide noise reports, briefings and workshops for members; the Noise Management Board (NMB) where we develop, agree and oversee strategic noise management initiatives; the Noise and Track Monitoring Advisory Group (NaTMAG) where we monitor and review noise performance; and additional meetings and briefing events, for example with local MPs and at our annual NMB and Airspace public meeting.

8.1.5 Through these many engagement events and meetings, we are better able to understand the noise issues which are of greatest concern and work with all external stakeholders on developing strategies to address them. This is done primarily through our Noise Action Plan and NMB action plan. We are committed to doing everything we can to address these issues and improve the noise environment around the airport..

8.1.6 In addition to specific engagement on noise issues we have a wider community engagement programme which is focused on building positive relationships, through listening, sharing information and playing an active role in events and programmes across the region.

8.1.7 There are a number of ways we achieve this. For example we engage directly, through our Discover Gatwick programme, which provides regular opportunities for community representatives to visit the airport, gain first-hand insights into the airport operation and how we are working to reduce our impacts and increase the benefits of the airport for the region.

8.1.8 We also actively participate in community debate through GATCOM, the airport's formal consultative body which meets quarterly. This body is chaired independently, with 32 committee members from groups across the region representing a wide range of interests including local communities across four counties, civil aviation, passenger service, business development, tourism and environmental issues.

8.1.9 Through our direct engagement with GATCOM, local councils and other groups we have identified the issues that are most important to local residents and businesses. These include education, employment and skills; local economy; environment; and local community support. We have prioritised our community investment programme in response to these issues and aim to develop long-term relationships and partnerships that can deliver lasting benefits across the region. Examples include direct engagement with young people through our Education Programme; our longstanding relationship with Gatwick Greenspace Partnership; and the more recent Gatwick Foundation Fund. In addition, our local charity partnerships and employee volunteering activities provide wider opportunities for face to face engagement and therefore further relationship building and mutual understanding.

8.1.10 Our programme of local community support includes sponsorship and participation in a wide range of local community events as well as larger scale regional events. These activities help to bring local residents together and give us an opportunity to connect with our neighbours. Wherever possible we use these events to raise awareness of Gatwick's business priorities such as sustainability, diversity and accessibility.

8.1.11 We also take an active role in the local and regional business community, through our membership of business groups and economic partnerships. This provides us with valuable opportunities to share information; gain insights into local challenges and opportunities; and directly support events and programmes that support local businesses and economic growth.

HOW WE INVEST

8.1.12 Our community investment programme includes charity partnerships, and direct funding to meet community needs and priorities.

8.1.13 We encourage all our staff to participate in fundraising activities with our charity partners, focused through two-year partnerships with local and airport charities. In addition we have a fund matching scheme in place which gives an extra financial boost to staff who are embarking upon their own charity fund raising efforts. We actively support the participation of all our staff in local initiatives and offer them the chance to take up to two volunteering days every year to get involved with organisations and projects which have a direct relevance to supporting or improving the communities they live in.

8.1.14 Through our Section 106 Agreement with West Sussex County Council and Crawley Borough Council we fund the Gatwick Airport Community Trust (GACT). GACT was first established in 2001 and is an independent trust supporting local charities. GACT supports schemes that are targeted towards the development of young people, the arts, sporting facilities, environmental improvement and conservation, improvements to community facilities, volunteering, the elderly and the disabled.

8.1.15 In addition to our funding to GACT we launched the Gatwick Foundation Fund in 2016, working in partnership with the Community Foundations in Kent, Surrey and Sussex to oversee £300,000 of annual grants for worthy causes across the region. These donations are divided equally between the Kent, Surrey and Sussex Community Foundations to make awards to non-profit organisations including charities, social enterprises, community groups and voluntary organisations which play an important role in the local community. The funding is used to promote employment, training and skills, support for families, the elderly and young people at a local level across the three counties.

8.1.16 Both the Trust and Gatwick Foundation Fund help ensure that as the airport continues to grow, funds are ploughed back in to the local communities most affected by the airport and its operations.

8.1.17 Environment and conservation is another area of investment highlighted as a priority by our local stakeholders. We have a long-standing association with the Gatwick Greenspace Partnership (GGP) which is one of the Sussex Wildlife Trust's Living Landscape projects, working across 200km² of countryside between Horsham, Crawley, Horley, Reigate and Dorking. Its aim is to inform, educate and involve a diverse range of people, working with local landowners, local authorities, the Forestry Commission, wildlife trusts and the Woodland Trust to support them in managing their land more sustainably. GAL finances a Learning & Engagement Officer who delivers community and environmental activities and facilitates opportunities for volunteers, of which there were more than 400 in 2017.

We encourage all our staff to participate in FUNDRAISING ACTIVITIES WITH OUR CHARITY PARTNERS, focused through two-year partnerships with local and airport charities.

A APPENDICES

A.1 PLANNING, REGULATORY AND LEGISLATIVE CONTEXT

A.1.1 INTRODUCTION

The day-to-day operation of Gatwick, and its longer-term development, is influenced, controlled and monitored by many different organisations and stakeholders. Legislation and best practice guidance means we must meet a wide range of prescribed and recommended criteria across all our activities.

The role of central Government and in particular its new Aviation Strategy, National Policy Statement and airspace modernisation programme are described in Chapter 3.

This chapter explains how our operation is currently affected by other forms of regulation and legislation which fall under the following headings:

- **Local government planning policies**
- **Airport Safety and Security**
- **Economic regulation**
- **Environmental controls**
- **Aerodrome safeguarding**

A.1.2 LOCAL GOVERNMENT PLANNING POLICIES

Gatwick is located within the administrative areas of Crawley Borough Council and West Sussex County Council. The airport also lies on the boundary with Surrey County Council to the north. Mole Valley, Reigate and Banstead, Tandridge, and Mid Sussex District Councils lie to the north west, north east, east and south east respectively. **Plans 2 and 3** show the airport in relation to these administrative areas.

CRAWLEY BOROUGH LOCAL PLAN

The plans and planning policies for the Crawley area are set out in the Crawley Borough Council Local Plan 'Crawley 2030' which was adopted in 2015. Chapter 9 of the Crawley Local Plan deals with Gatwick Airport and sets out the objectives, sustainable development approach, policies and matters related to safeguarding land for a possible additional runway. Of particular importance are two local planning policy statements GAT1 and GAT2.

GAT1

Within the airport boundary as set out on the Local Plan Map, the Council will support the development of facilities which contribute to the safe and efficient operation of the airport as a single-runway, two-terminal airport of up to 45 million passengers per annum, provided that:

i) The provided use is within the airport boundary and contributes to the safe and efficient operation of the airport

ii) Satisfactory safeguards are in place to mitigate the impact of the operation of the airport on the environment, including noise, air quality, flooding, surface access, visual impact, and climate change

iii) The proposed use would not be incompatible with the potential expansion of the airport to accommodate the construction of an additional wide-spaced runway

GAT2

The Local Plan Map identifies land that will be safeguarded from development, and which would be incompatible with expansion of the airport to accommodate the construction of an additional wide-spaced runway (if required by national policy), together with a commensurate increase in facilities contributing to the safe and efficient operation of the expanded airport.

Minor development within this area, for instance changes of use and small-scale building works such as residential extensions, will normally be acceptable. Where appropriate, planning permission may be granted on a temporary basis. The airport operator will be consulted on all planning applications within the safeguarded area.

Crawley Borough Council has also prepared supplementary planning guidance on Gatwick. Adopted in November 2008, the supplementary planning document 'Development at Gatwick Airport' provides additional detail on the way in which the Council will implement the core strategy policies in dealing with planning applications, consultations and other planning matters at the airport.

OTHER POLICIES

A number of the neighbouring local planning authorities also include policies that have an impact on our development. These plans recognise our importance as the main generator of economic growth in the region. There is acceptance of the principle that we will grow towards greater utilisation of the two terminal, single runway airport. The plans also acknowledges the environmental impact of the airport on the wider area and the development pressures it can create.

Some plans include policies to preclude airport-related development not owned or operated by Gatwick Airport, such as car parks in off-airport locations. We are keen to promote the use of sustainable modes of transport to and from the airport. Where passengers opt to travel by private car, we support the principle that the most sustainable option is to park within the airport boundary, so as to minimise any further journeys on local roads. Our parking capacity meets passenger demand and we do not support car parking located outside of the airport, which can impact local communities and countryside.

County councils are responsible for transport plans. The West Sussex Transport Plan 2011 to 2026 is of particular relevance to us. It sets out the strategy for guiding future investment in West

Sussex highways and transport infrastructure, and creates a framework for considering transport infrastructure requirements associated with future development across the county.

DEVELOPMENT MANAGEMENT

While many of our developments require planning permission, some operational developments which do not give rise to any significant environmental impacts benefit from Permitted Development powers conferred by the 2015 Town and Country Planning (General Permitted Development) Order. In cases where the Permitted Development powers are available, there is still a requirement to consult with Crawley Borough Council.

Some larger developments that could give rise to significant impacts on the environment require an Environmental Impact Assessment. This provides information on the likely environmental effects of the proposed development, for example around noise and air quality. In this case an application for planning permission is required.

Major airport developments that result in an increase in physical capacity of more than 10 million passengers a year, including new terminals, runways or developments, are defined in the Planning Act (2008 and 2016) as Nationally Significant Infrastructure Projects. These projects do not follow the usual local planning process but are administered by the Planning Inspectorate and require a Development Consent Order. Final decisions on such applications are made by the relevant Secretary of State.

SECTION 106 LEGAL AGREEMENT

We have a Section 106 Agreement with West Sussex County Council and Crawley Borough Council which runs to the end of 2018. This agreement outlines how our operation, growth and environmental impacts will be managed responsibly and underpins the important relationship between our owners and those local authorities with responsibility for planning, environmental management and highways.

The legal agreement contains far-reaching objectives and obligations. This legal agreement is also supported by a Memorandum of Understanding between the two principal local authorities as well as adjoining authorities, to ensure that the interests of these other bodies are taken into account.

The current agreement builds on the original ground-breaking agreement that began in 2001, bringing significant benefits to the airport and the communities we serve and affect. It demonstrates a desire to see Gatwick grow on a one-runway two-terminal configuration, while balancing our environmental impacts. This legal agreement continues to define our future and the role we play in local, regional and national economies.

The principal objectives contained in the legal agreement are:

- The desire to see the airport continue to grow on a one runway two terminal configuration;
- The need to ensure that as the airport grows measures are in place to minimise, so far as possible, its short and longer term environmental impacts;
- The importance of maintaining and enhancing the ways in which the parties to the agreement share information and work together and with other stakeholders to bring significant benefits to the airport and the communities it serves and effects.

We are currently working with West Sussex County Council and Crawley Borough Council on extending the agreement beyond its current expiry at the end of 2018.

A.1.3 AIRPORT SAFETY AND SECURITY

Airport security requirements are subject to statutory regulation. This ensures a range of measures are implemented across the operation of the airport to provide a multi-agency, layered approach to security delivery.

These measures include areas such as the screening and searching of passengers, staff, baggage, vehicles and goods entering the sterile cordon of the Security Restricted Area, as well as the delivery of staff recruitment, vetting, training and access control. These requirements can impact infrastructure development, influencing the form and character of airport facilities.

Both the Civil Aviation Authority and the Department for Transport are seeking to adopt a more risk-based approach to the enforcement of aviation security regulations. Their strategy includes the introduction of a performance-based system, focusing on clear security outcomes that would enable an airport operator to implement directed security measures in a manner that is both operationally viable, as well as mitigating the risk identified by the regulation. Historically, aviation security measures have been forensically inspected and measured by the regulator. Should the performance-based system be fully adopted by the industry, it is anticipated that a more flexible risk-based approach will be taken by the inspection teams.

A.1.4 ECONOMIC REGULATION

Airlines using Gatwick pay Core Service Charges. These contribute to our operating costs and finance a programme of capital investment in a way that satisfies user expectations.

On 1 April 2014 a new regulatory framework, based on commitments, backed by a licence granted by the Civil Aviation Authority (CAA) and supplemented by a monitoring regime, came into operation at Gatwick. This framework provides Gatwick with increased flexibility in its operations and enables normal commercial arrangements to be made between airport and airlines.

The commitments established by the framework are a set of legally enforceable undertakings made by Gatwick Airport Limited (GAL) to our airlines covering price, service, transparency, financial resilience, operational resilience and dispute resolution. The commitments also enable GAL to enter into a series of bi-lateral contracts incorporating price, service and duration, agreed on a contractual basis between GAL and individual airlines.

Among our commitments, we are limited to increasing our published airport charges (our "gross yield") over the commitments period, by no more than RPI (Retail Price Index) +1.0% per year (on average), and average prices (taking into account bi-lateral contracts) at RPI +0.0% per year (on average).

As part of the commitment we have undertaken to build and operate the airport to achieve a set of Core Service Standards. These range in output measures and include metrics such as security queue times, availability of escalators and passenger satisfaction scores. In delivering these outputs we also committed to undertake capital investment expenditure of at least £100 million per annum over the next seven years.

The CAA has set out its view of what it believes to be a fair price in the five years from 1 April 2014 of RPI -1.6% per year. The CAA also considered that GAL should undertake capital investment expenditure of at least £160 million per annum on average (using a 2011/12 price base). The CAA has stated that it will monitor GAL's pricing and other issues such as capital investment expenditure on an annual basis.

In granting GAL a licence, the CAA's decision includes a financial resilience condition. This requires us to produce a certificate of adequacy of resources which we must submit to the CAA on an annual basis. This condition also restricts the business of GAL to those businesses we were undertaking on 1 April 2014, including the ownership and operation of the airport. Any other new business activities require the written consent of the CAA. The financial resilience condition also requires undertakings from the ultimate holding company not to take any actions that would likely cause a breach of the licence and provide information requested by the CAA to enable us to comply with the licence.

Gatwick has also committed to consult annually on an Operational Resilience plan and Monitoring report. The CAA has also stated that as part of the monitoring regime, we should report to the CAA a shadow regulatory asset base (RAB) calculation. This is in case in the future the CAA should consider the interests of passengers would be better served by tighter regulation being introduced.

The Commitments expire on 31 March 2021. Gatwick has undertaken to notify the CAA and all operators at the Airport at least two years prior to the end of the term of its intentions with regard to the continuation of Commitments. In June 2018 the CAA published CAP 1684: "Future economic regulation of Gatwick Airport Limited: initial consultation."[21] This document consults on a possible CAA process to determine the regulatory arrangements for the period beyond the end of the current Commitments in 2021. The document is broadly supportive of Gatwick's favoured process of approaching the airlines directly with a commercial proposal, recognising this mechanism was embedded in the original Commitments. GAL intends to publish this autumn its proposals for extending commitments, including pricing, and to consult with airlines on these proposals.

All airport operators are also subject to aerodrome licensing under the Air Navigation Order 2009, which requires an airport operator to demonstrate that it is competent to conduct aerodrome operations safely. That licensing requirement is not affected by the Civil Aviation Act 2012.

[21] *http://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=8548*

A.1.5 AERODROME SAFEGUARDING

Certain civil aerodromes, including Gatwick, are officially safeguarded and we have now gained European Aviation Safety Agency (EASA) certification, which sets out the aerodrome safeguarding requirements. This form of safeguarding concerns the protection of the safe operation of the airport and is entirely separate and additional to the land safeguarding for a second runway.

The EASA aerodrome safeguarding requirements are enshrined in Town and Country Planning law within ODPM/DfT circular 01/2003 'Safeguarding Aerodromes, Technical Sites & Military Explosives Storage Areas'. As GAL is a statutory consultee, local planning authorities consult with us on certain planning applications that have the potential to impact on the safety of aerodrome operations.

Aerodrome safeguarding is intended to:

- Ensure that no buildings or structures cause danger to aircraft, either in the air or on the ground; for example tall buildings which might infringe the airport's Obstacle Limitation Surfaces (OLS), which protect the airspace around the aerodrome.
- Prevent any proposed buildings and structures from impacting on navigational aids used by the airport and/or by aircraft. Potential issues can include, signal reflection/refraction, false plots and clutter on radar screens.
- Protect aeronautical ground lighting, such as approach and runway lighting, by ensuring that they are not obscured by any proposed development and that any proposed lighting schemes cannot be confused with aeronautical ground lighting patterns.
- Ensure that the wildlife strike risk to the aerodrome, in particular bird strikes, is not increased and where possible reduced as wildlife strikes pose a serious threat to flight safety. It is estimated that damage to aircraft and flight delays from wildlife strikes around the world cost more than a billion euros per year. All developments are assessed on a case by case basis.
- Ensure that no buildings or structures create any turbulence or wind shear which have the potential to affect aircraft taking off or landing at the aerodrome.
- Ensure that no buildings or structures impact on Instrument Flight Procedures (IFPs).
- Prevent any construction processes from interfering with aerodrome operations through the production of dust or smoke, temporary lighting or construction equipment impacting on radar and other navigational aids.
- Prevention of any glint and glare issues to pilots, aircrew and ATC from proposed lighting and other installations.

We make every effort to engage and work with developers and other third parties at an early stage to ensure that aerodrome safety is not compromised and to ensure that the aims of the development are still achieved where possible, for example landscaping schemes that result in biodiversity gains but do not increase the bird strike risk to the airport.

PUBLIC SAFETY ZONES

The risk of air accidents occurring at or within close proximity to airports is extremely low. However the use of land at the ends of the runway is restricted through the use of designated areas known as Public Safety Zones.

Through planning policy in DfT Circular 01/2010 Control of Developments in Airport Public Safety Zones, the Government aims to ensure that there is no increase in the number of people living, working or congregating in Public Safety Zones (PSZs) and that, over time, the number should be reduced as circumstances allow.

A.2 GLOSSARY OF TERMS

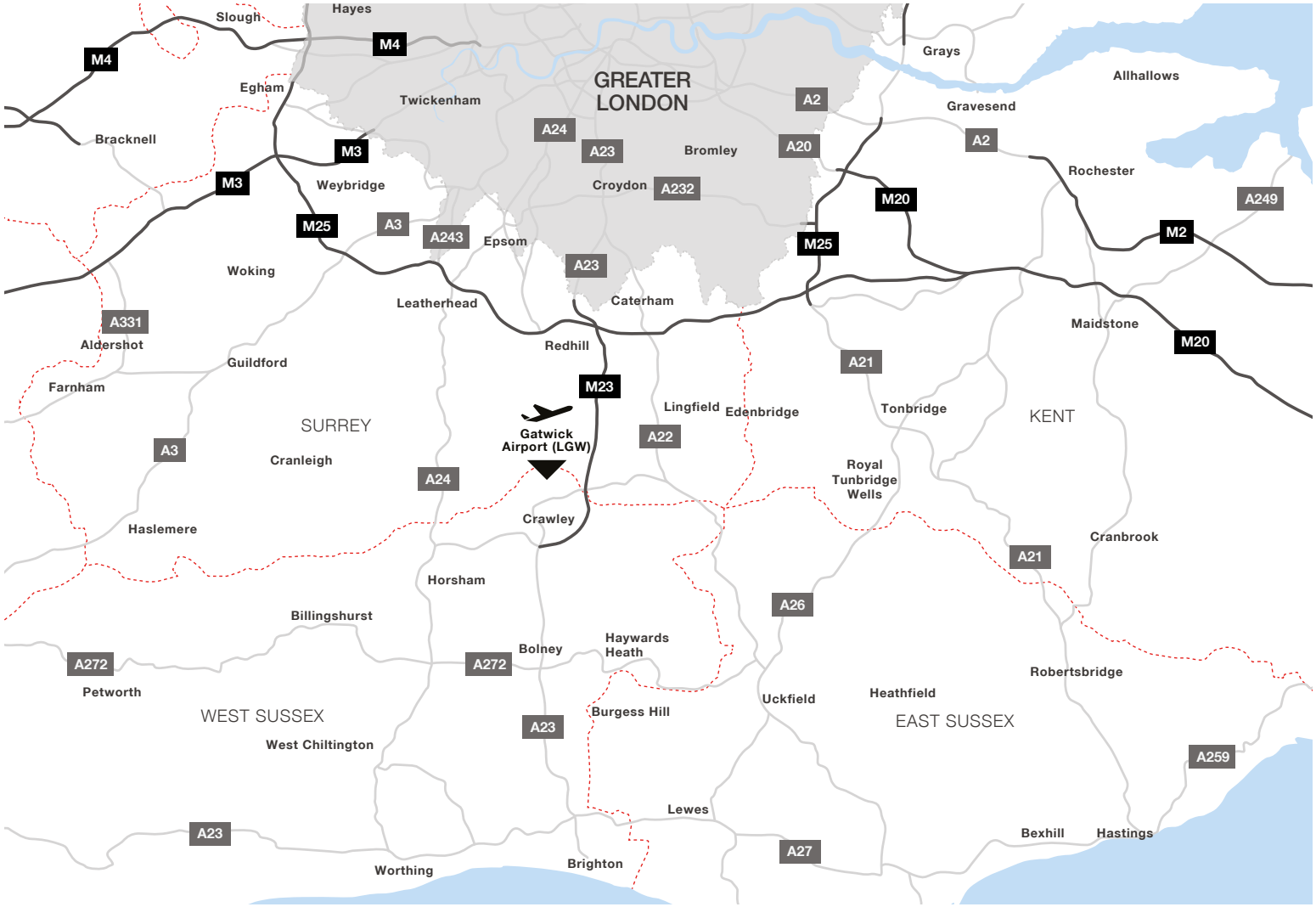
A320 Neo	New generation short-haul aircraft built by Airbus
A350	New generation long-haul aircraft built by Airbus
A380	Airbus A380. The largest passenger aircraft currently in service
ACDM	Airport Collaborative Decision Making
ANS	Air Navigation Solutions - the provider of ATC services at Gatwick
APF	2013 Aviation Policy Framework
APU	Auxiliary Power Unit
AQMA	Air Quality Management Area
ASAS	Airport Surface Access Strategy
ATC	Air Traffic Control
ATM	Air Transport Movement
B737 Max	New generation short-haul aircraft built by Boeing
B787	New generation long-haul aircraft built by Boeing
BAA	The former owners of Gatwick Airport
BAP	Biodiversity Action Plan
CAA	Civil Aviation Authority
Category 1 Airline Waste	Waste from non-EU flights comprising food waste, or anything mixed with it.
CDA	Continuous Descent Approach
CIP	Capital Investment Programme
CMA	Competition and Markets Authority
CTA	Common Travel Area – Ireland, Channel Islands and the Isle of Man
dB / dBA	Decibel - a measure of the intensity of sound levels / The 'A' weighting refers to a scale corrected for the way human ears perceive noise
DCO	Development Consent Order – planning consent process for Nationally Significant Infrastructure Projects
Decade of Change	Gatwick's 10-year sustainability strategy
DfT	Department for Transport
E-gates	Automated gates for checking machine-readable passports
EHS	Environmental, Health and Safety
ERCD	Environmental Research and Consultancy Department (of the CAA)
ETS	European Union - Emissions Trading Scheme
FASI(S)	Future Airspace Strategy Implementation (South) – programme to update and transform the airspace above south east England
FEGP	Fixed Electrical Ground Power
GACT	Gatwick Airport Community Trust
GAL	Gatwick Airport Limited - the company which operates Gatwick Airport
GATCOM	Gatwick Airport Consultative Committee
Gatwick Diamond	Business led private/public sector partnership promoting economic growth in a defined area between Croydon and Brighton. Part of the Coast to Capital Local Enterprise Partnership.
Gatwick Foundation Fund	A fund launched by GAL in 2016 to oversee the allocation of donations to good causes in the local area
GDP	Gross Domestic Product

GHG	Green House Gas emissions
GIP	Global Infrastructure Partners - the largest shareholder of Gatwick Airport
GPU	Ground Power Unit - to power aircraft systems when parked on stand
GVA	Gross Value Added
GWR	Great Western Railway
Ha	Hectares
HOSS	Home Owners Support Scheme
ICAO	International Civil Aviation Administration
'Kiss and Fly'	Passengers who are driven to or from the airport by private car
LAMP2	London Airspace Management Programme 2
LEP	Local Enterprise Partnership
Leq	Equivalent continuous noise level – a way of presenting a single decibel (dB) value for a period of time when sound levels vary.
LGW	Gatwick Airport
LTO	Landing and Take-off cycle
mppa	Million passengers per annum
MSCP	Multi Storey Car Park
NATS	The provider of en-route air traffic control and upper airspace management in the UK
NMB	Noise Management Board
NO_2	Nitrogen Dioxide
North West Zone	An area of the airport lying adjacent to the northern boundary, which contains the north west part of the airfield, the Virgin hangar, cargo sheds and long-stay car parking.
NPR	Noise Preferential Route for departing flights
NPS	National Policy Statement produced by Government
NSIP	Nationally Significant Infrastructure Project. Large scale projects as defined by the 2008 Planning Act.
NT	North Terminal
PM10	Airborne particles that have a median diameter of 10 microns
PM2.5	Airborne particles that have a median diameter of 2.5 microns
Quality Service Monitor (QSM)	A process GAL uses for measuring and monitoring passenger satisfaction performance
RBBC	Reigate and Banstead Borough Council
RET	Rapid Exit Taxiway
RPI	Retail Price Index
SA	Sustainable Aviation
Section 106 Agreement	2008 Section 106 legal agreement between Gatwick Airport, West Sussex County Council and Crawley Borough Council
Section 52 Agreement	GAL's 1979 legal agreement with West Sussex District Council regarding the provision of additional runway capacity
ST	South Terminal
Stand	Aircraft parking position on the apron
STEM	Science, Technology, Engineering and Maths
STW	Sewage Treatment Works
SUDS	A sustainable drainage system designed to treat and discharge surface water in a more sustainable way than traditional systems.
tCO2e	Tonnes of carbon dioxide equivalent – a measure for comparing all greenhouse gas emissions
WSCC	West Sussex County Council
08R/26L	The primary runway at Gatwick
08L/26R	The standby runway at Gatwick

PLANS

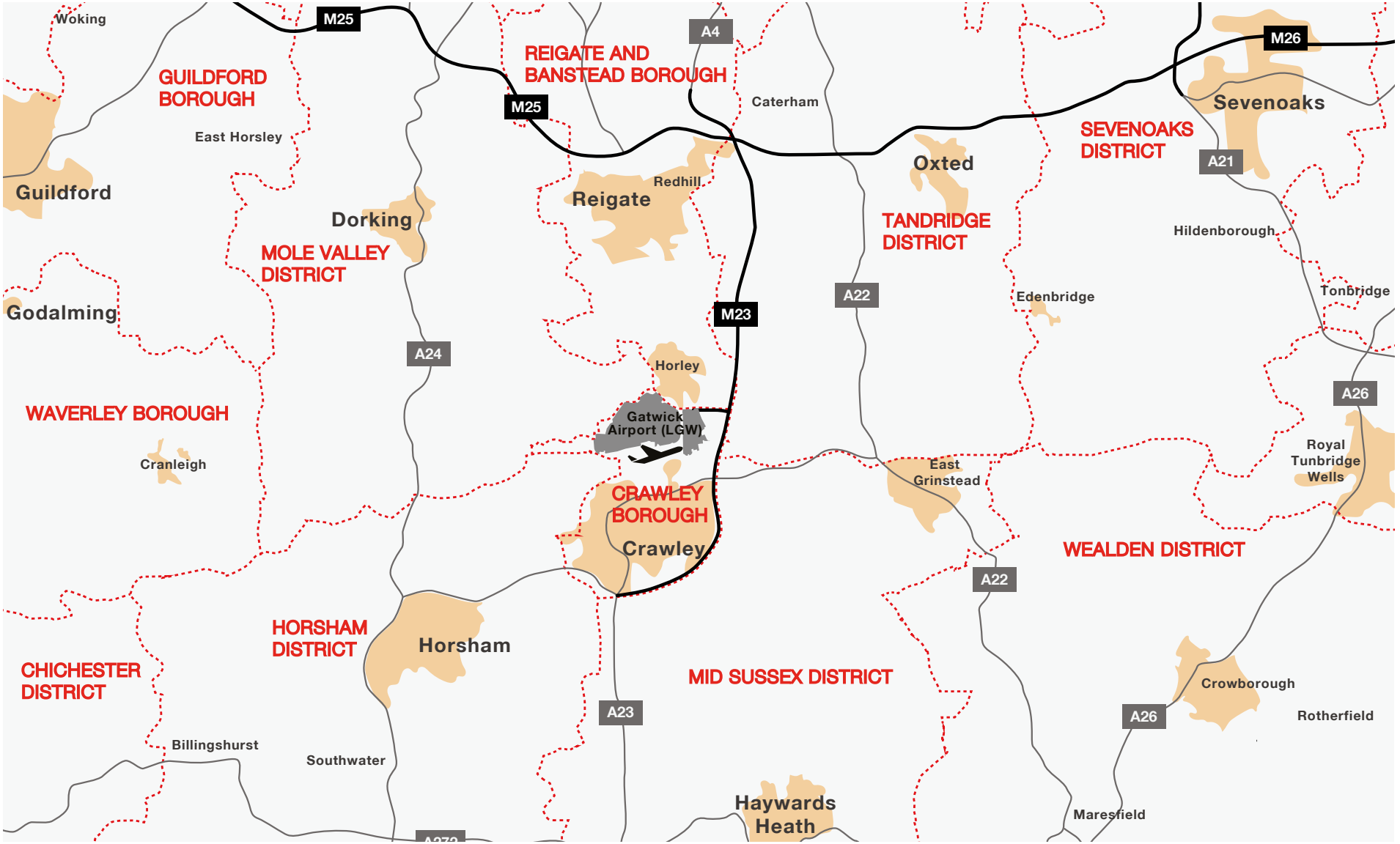
PLAN 1 - Global Destinations

Destination Airport



PLAN 2 - Gatwick's location in the region

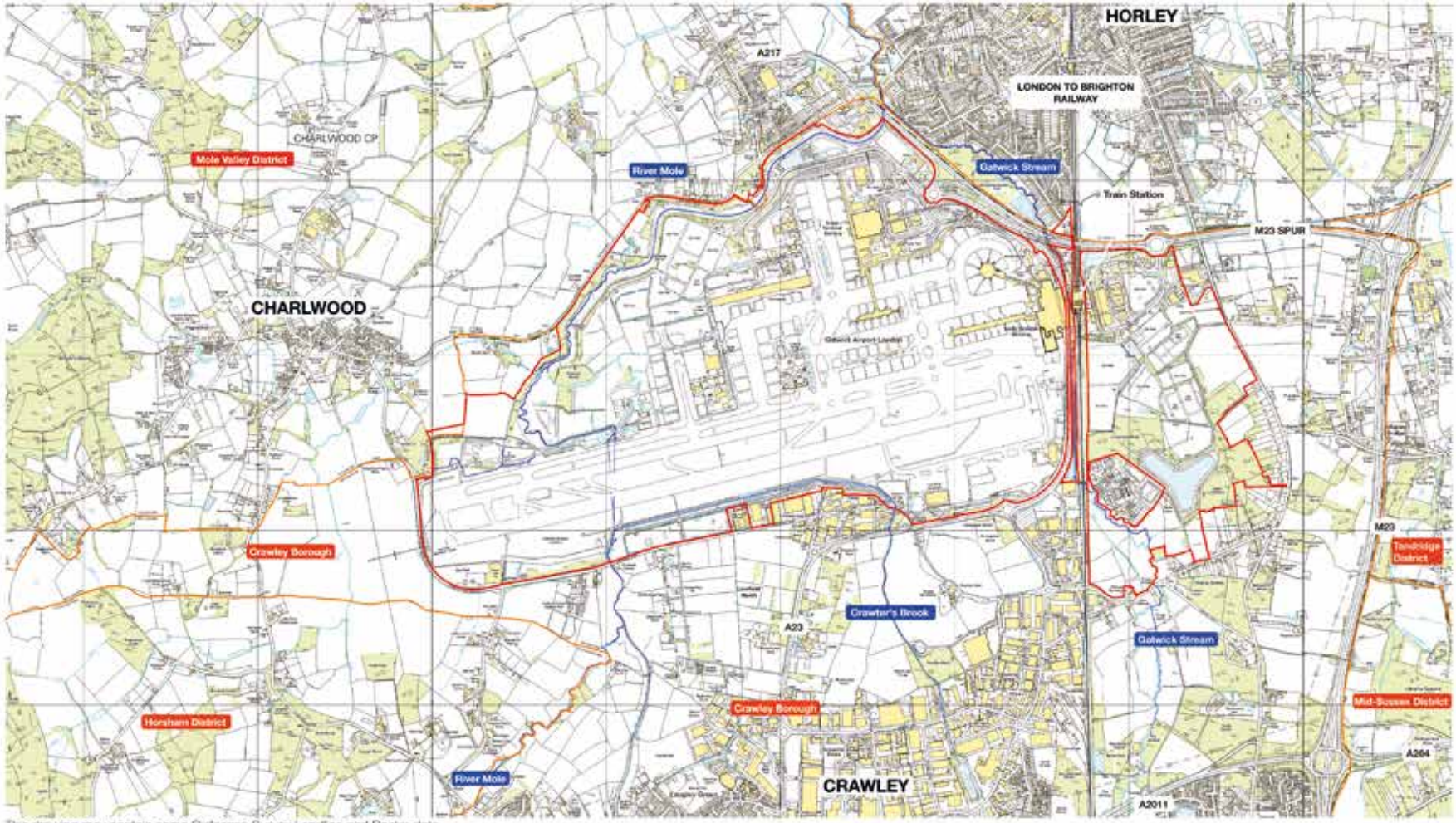
Motorways
A Roads
Gatwick Airport
County Boundaries
N



PLAN 3 - Local Council Administration

Gatwick Airport

Local Authority Boundaries



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Local Authority Boundaries

Airport Boundary

N

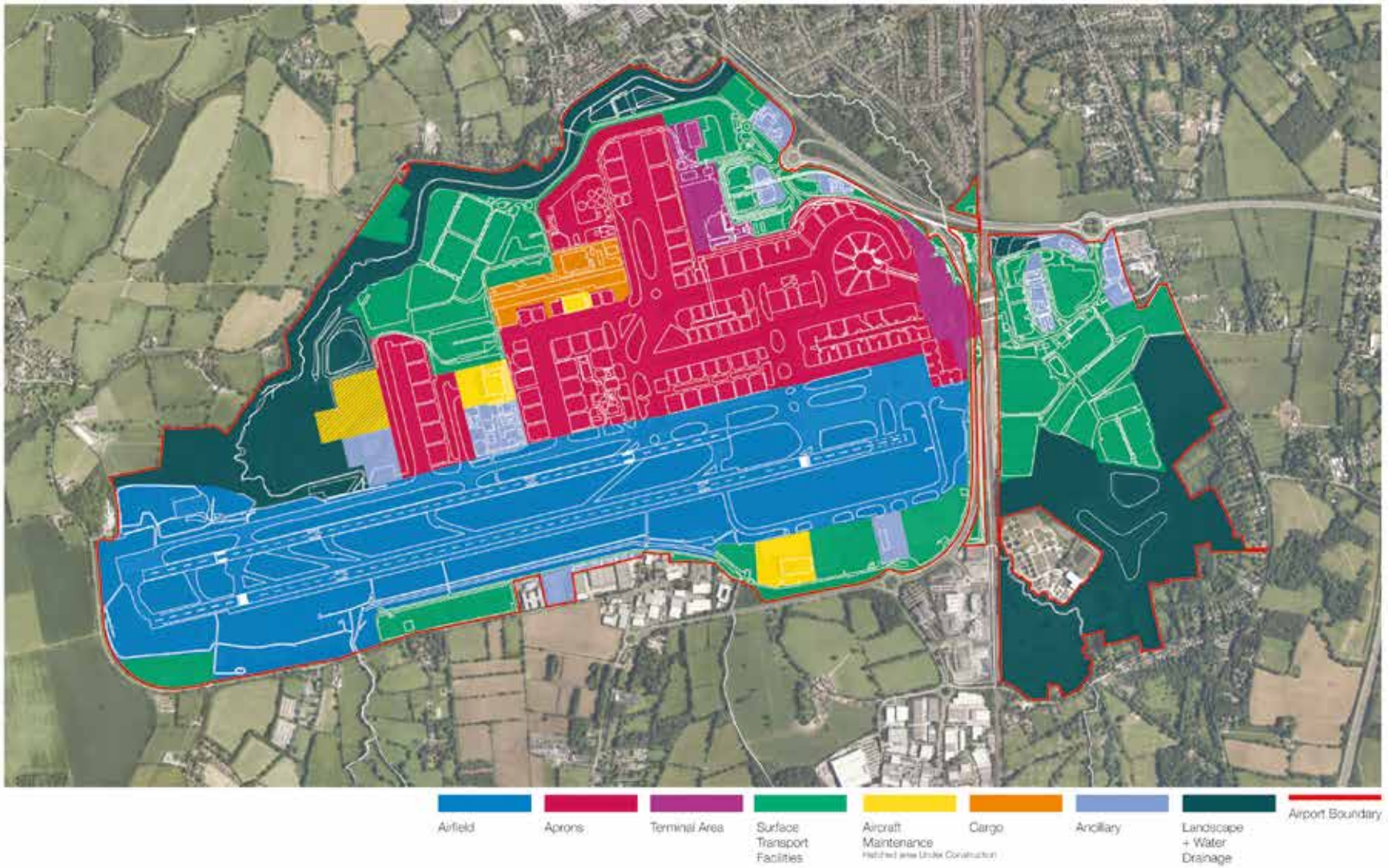
PLAN 4 - Location Plan

PLAN 5 - Key Features

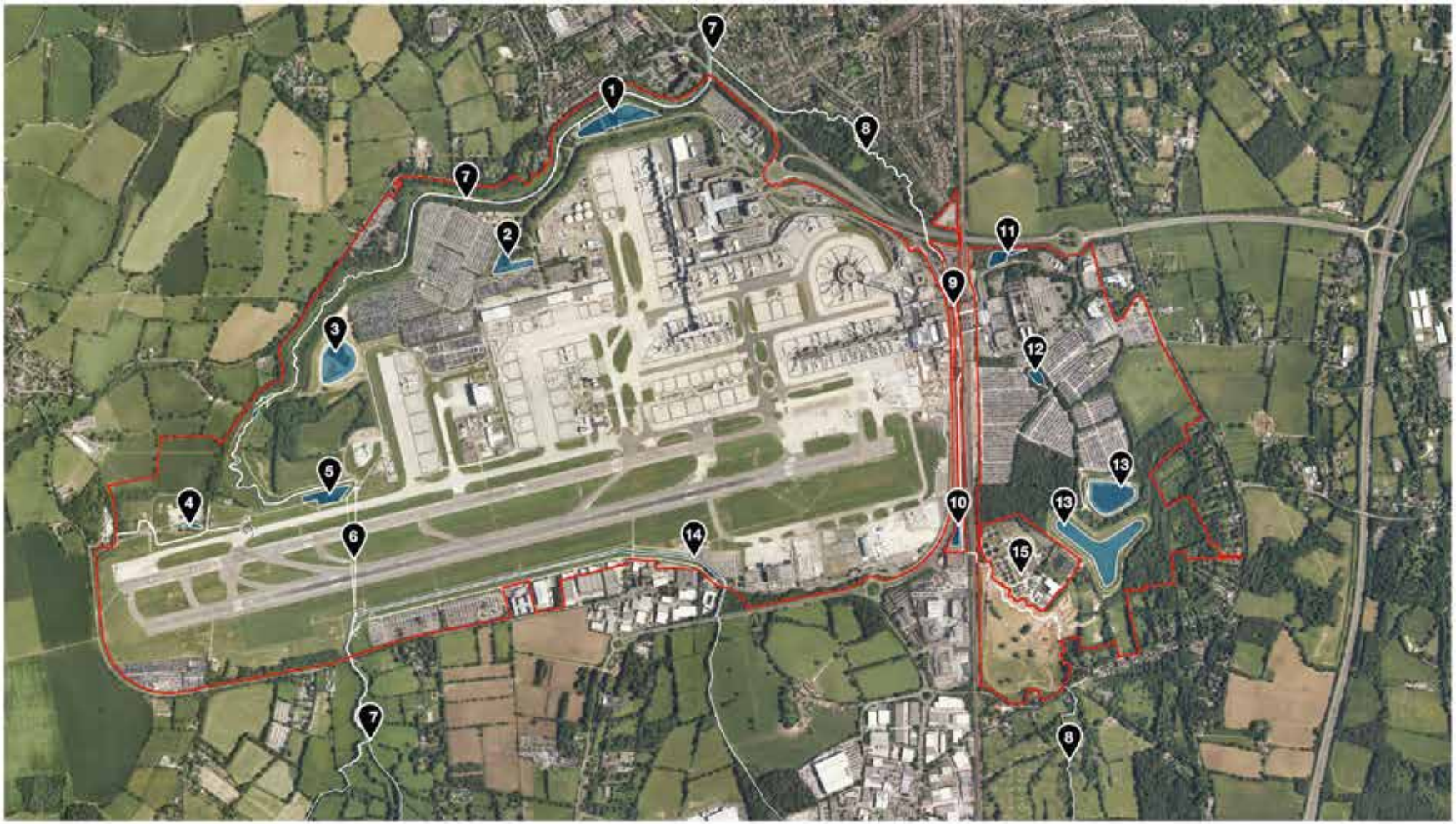
1 South Terminal
2 Pier 1
3 Pier 2
4 Pier 3
5 Ashdown House
6 Shuttle Station
7 Rail Station
8 Short Stay Car Park
9 Hilton Hotel
10 Atlantic House
11 North Terminal
12 Pier 4
13 Pier 5
14 Pier 6
15 Shuttle Station
16 Short Stay Car Park
17 Short Stay Car Park
18 Jubilee House
19 Premier Inn
20 Sofitel Hotel
21 Primary (08R/26L) Runway
22 Standby (08L/26R) Runway
23 Fire Station
24 Primary Air Traffic Control Tower
25 Fuel Farm
26 Vehicle Maintenance
27 Standby Air Traffic Control Tower
28 Virgin Atlantic Maintenance Hangar
29 Cargo
30 Balancing Pond
31 Long Stay Car Park (North)
32 Long Stay Car Park (South)
33 Pollution Lagoon
34 British Airways Maintenance Hangar
35 Filling Station
36 Crawley Sewage Works
37 Easy Jet Hangar
38 Hamilton By Hilton

Airport Boundary

N



PLAN 6 - Land Use

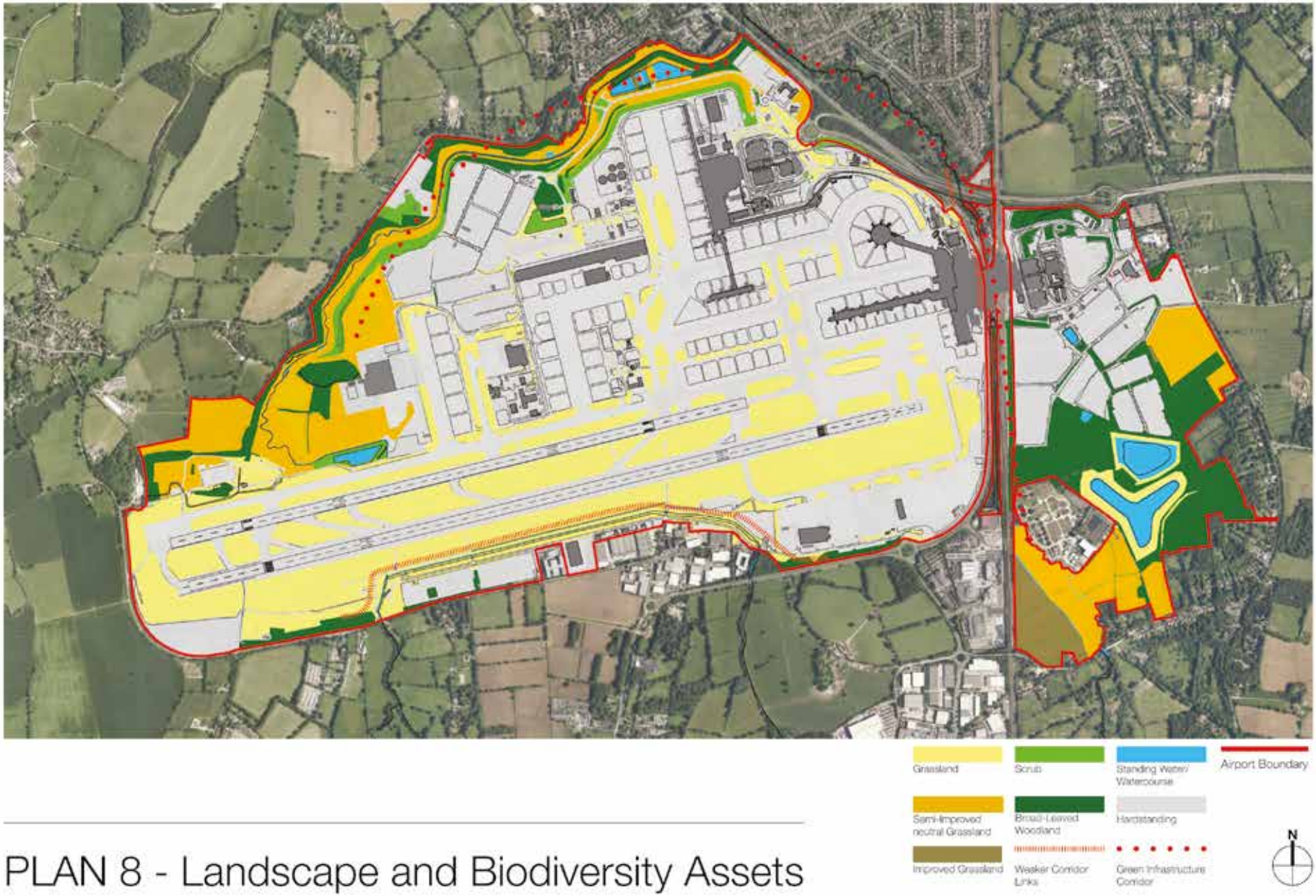


1 Pond D
2 Dog Kennel Pond
3 Pond M
4 Pond H
5 Pond A
6 River Mole Culvert and Siphon
7 River Mole
8 Gatwick Stream
9 Gatwick Stream Culvert
10 Pond E
11 Pond F
12 Pond G
13 Pollution Lagoon
14 Crawter's Brook
15 Crawley sewerage Treatment Works

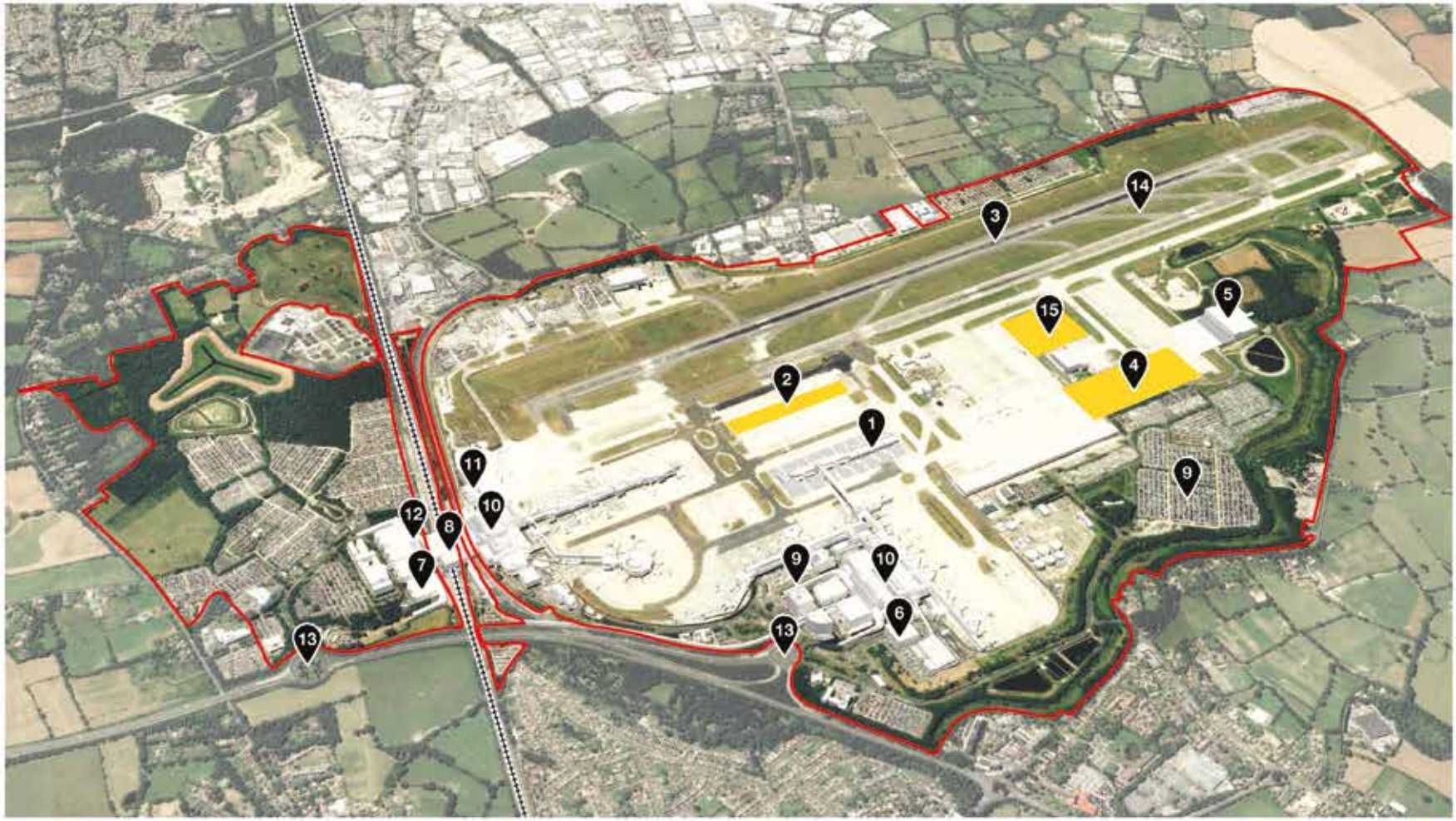
Airport Boundary

N

PLAN 7 - Surface Water Drainage Features



PLAN 8 - Landscape and Biodiversity Assets



PLAN 9 - Airport Layout - 2022

(Additional infrastructure compared to today)

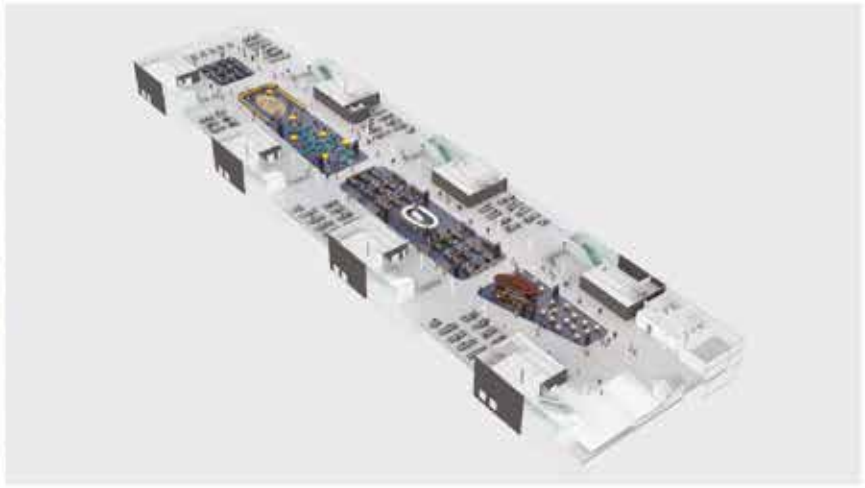
Planned or anticipated developments — Under construction

1 Pier 6 Extension
2 'Push and Hold' Stands
3 Runway resurfacing
4 Lima taxiway extension
5 Boeing Hangar
6 Multi Storey Car Park 7
7 Multi Storey Car Park 4
8 Improved Railway Station
9 Bus and coach facilities
10 Terminal improvements including departures lounges and bag-drop
11 New domestic baggage reclaim for South Terminal
12 Car rental facilities
13 Road junction improvements
14 Potential new Rapid Exit Taxiway
15 Addition remote aircraft parking stands

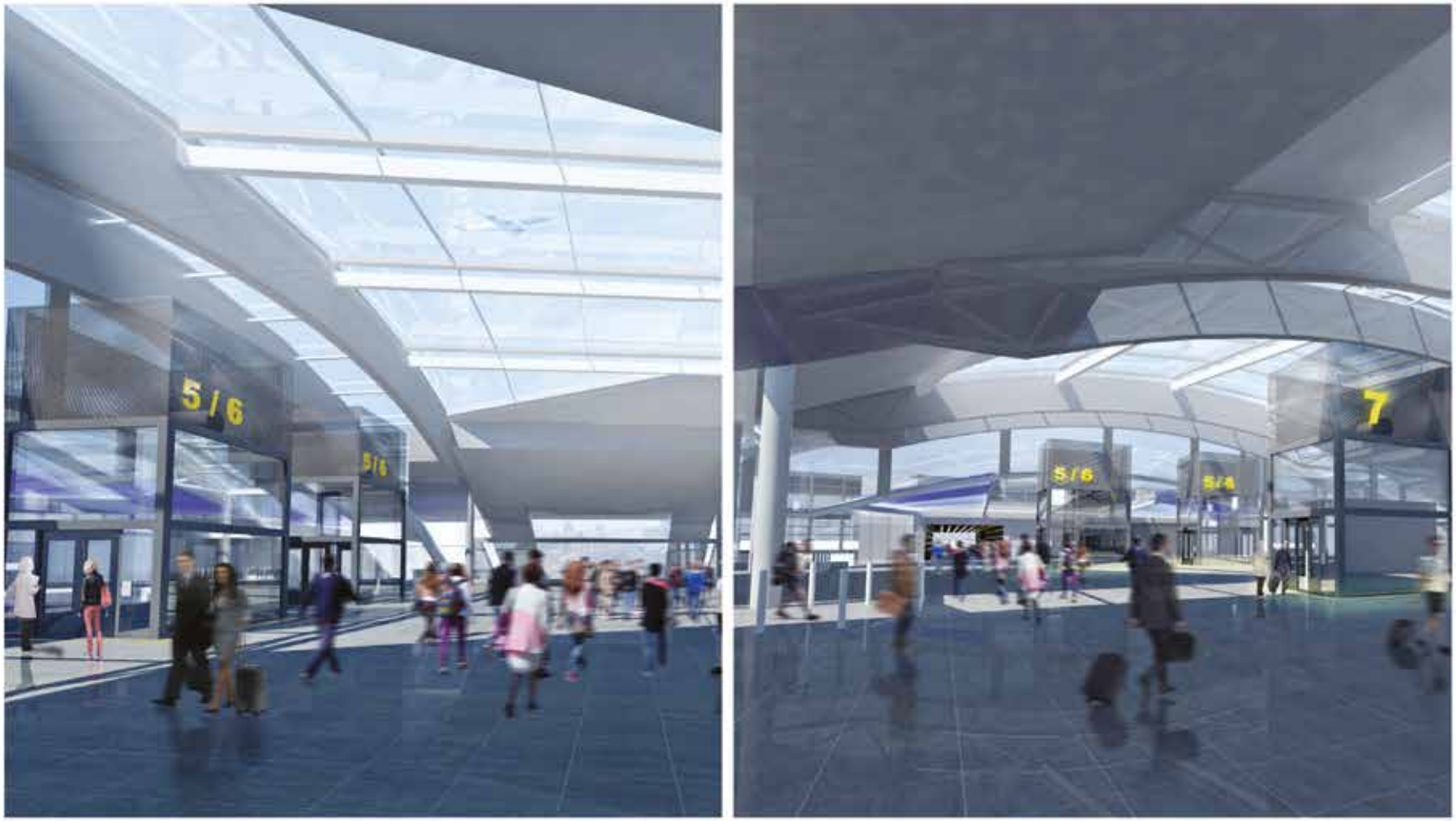
Airport Boundary

N

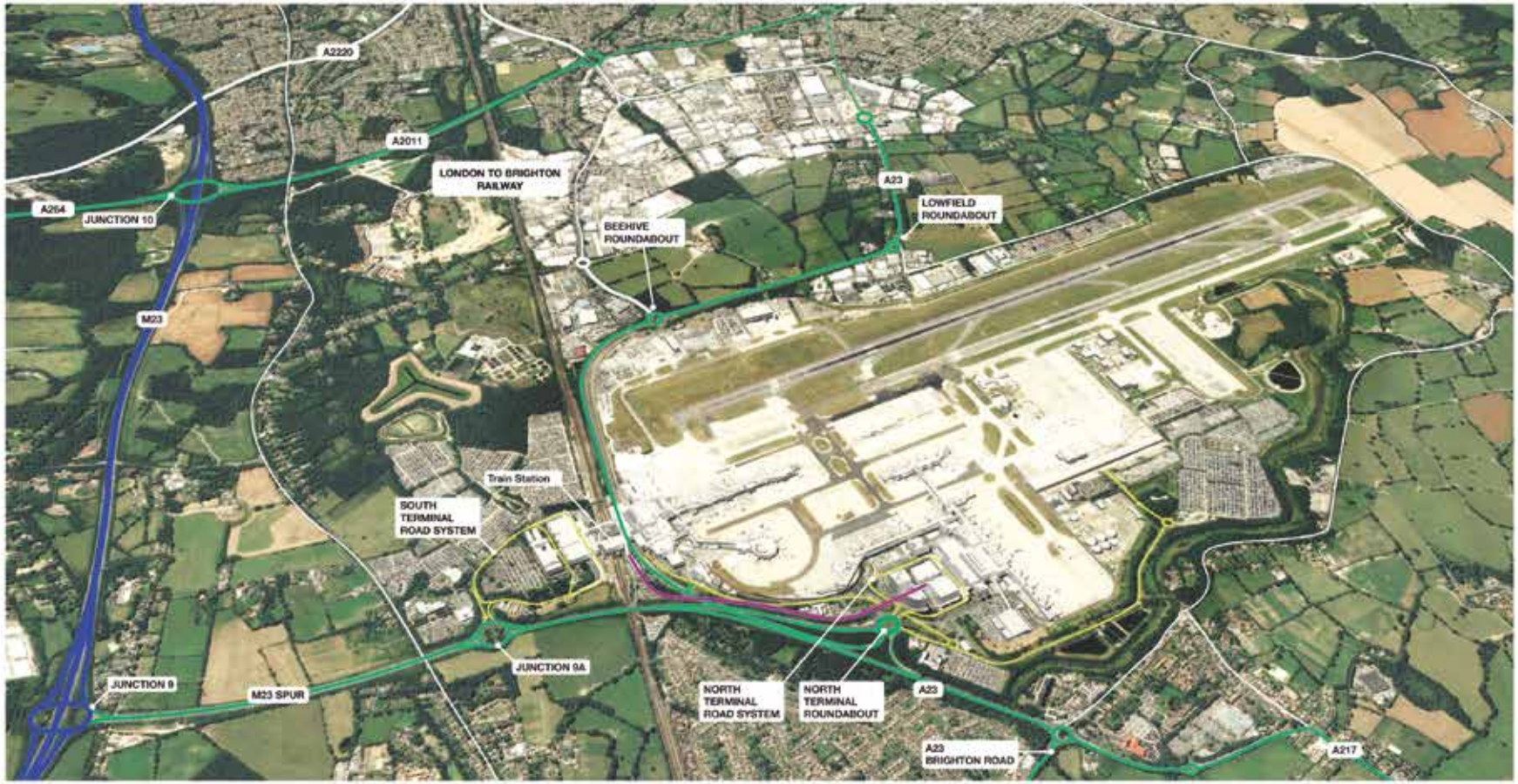
PLAN 10 - Planned Developments Boeing Hangar



PLAN 11 - Planned Developments Pier 6 Extension



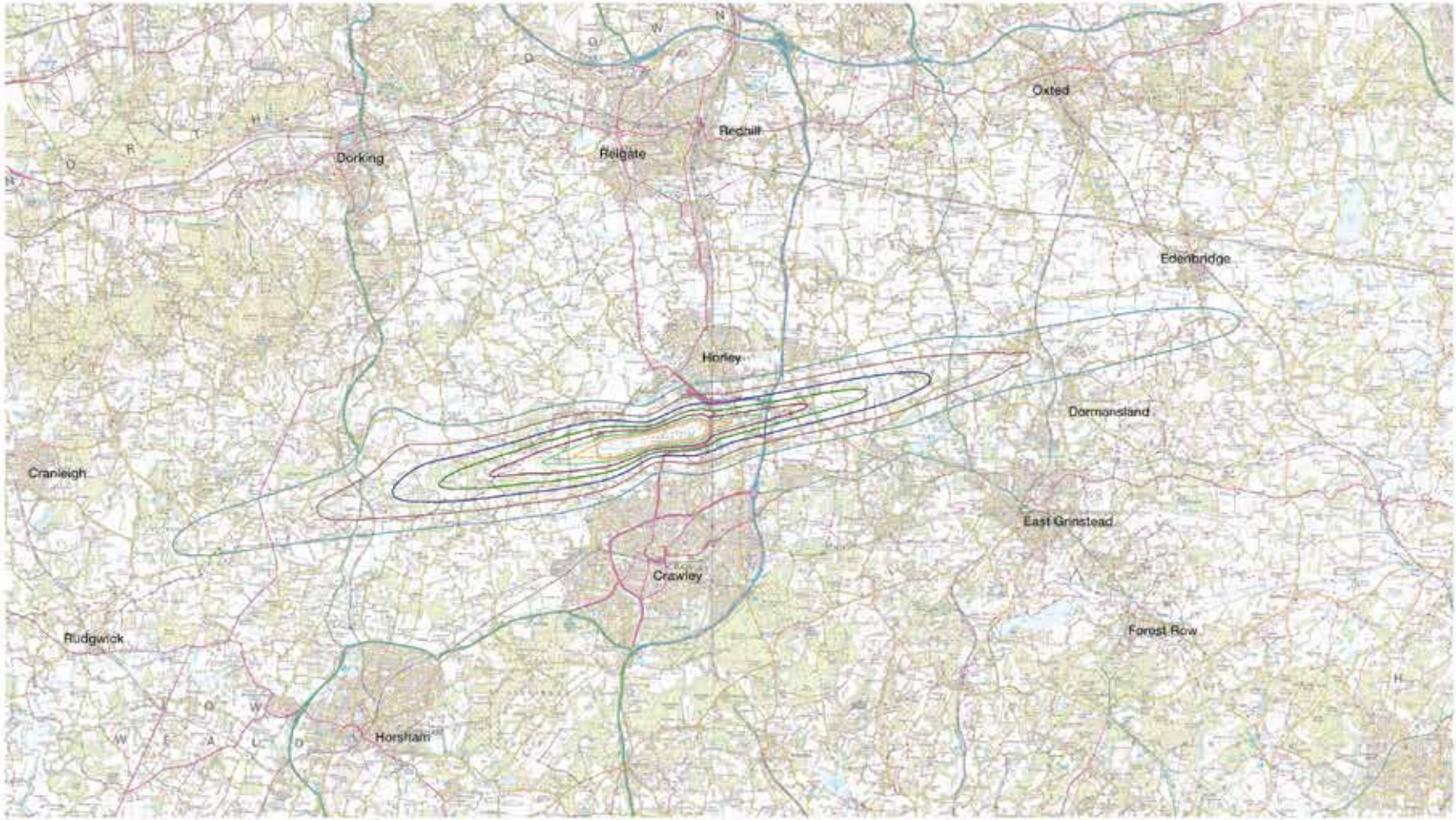
PLAN 12 - Planned Developments Gatwick Station



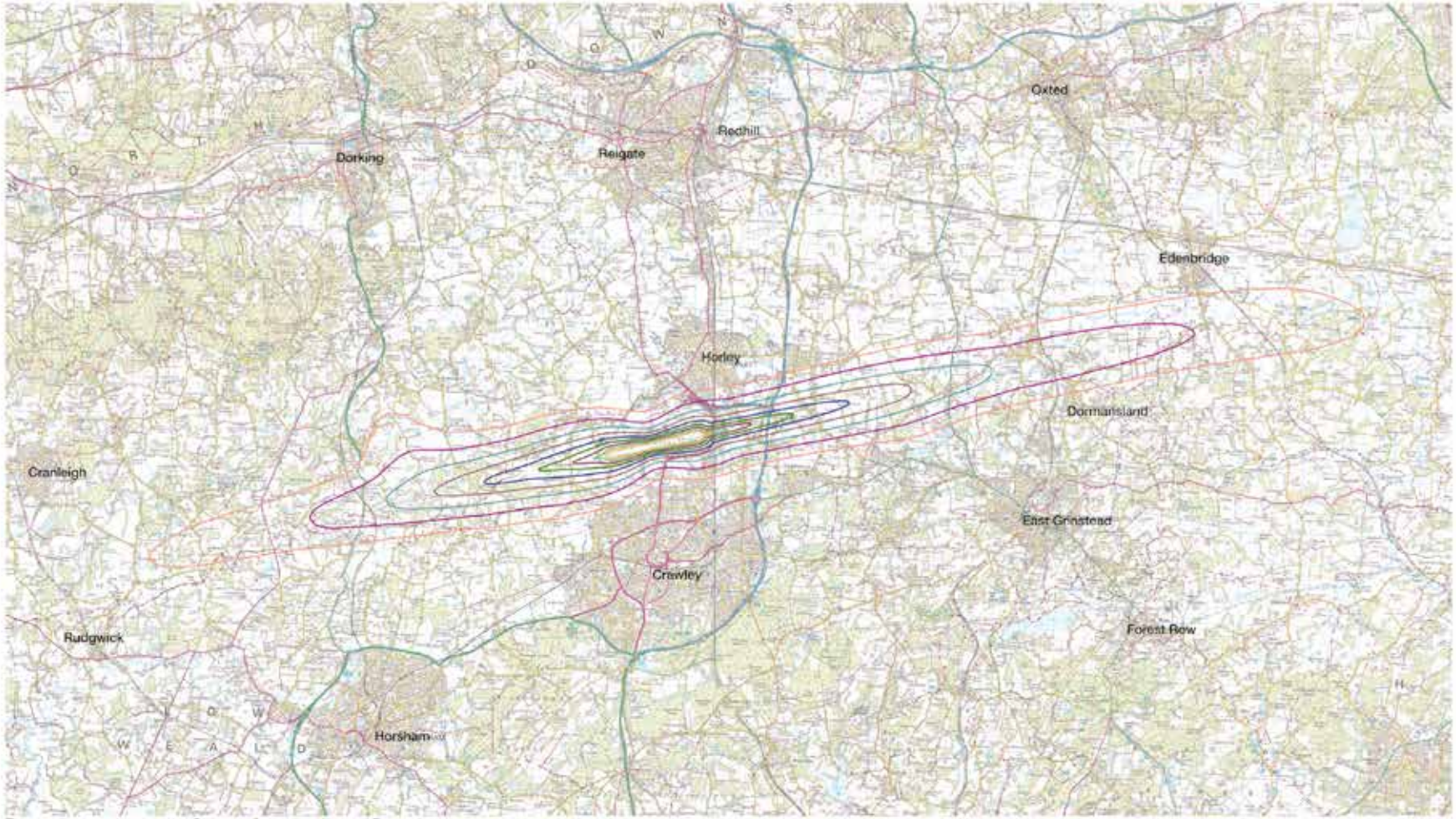
PLAN 13 - Surface Access Key Features

Motorway M23 | Main roads | On Airport Roads | Terminal Shuttle

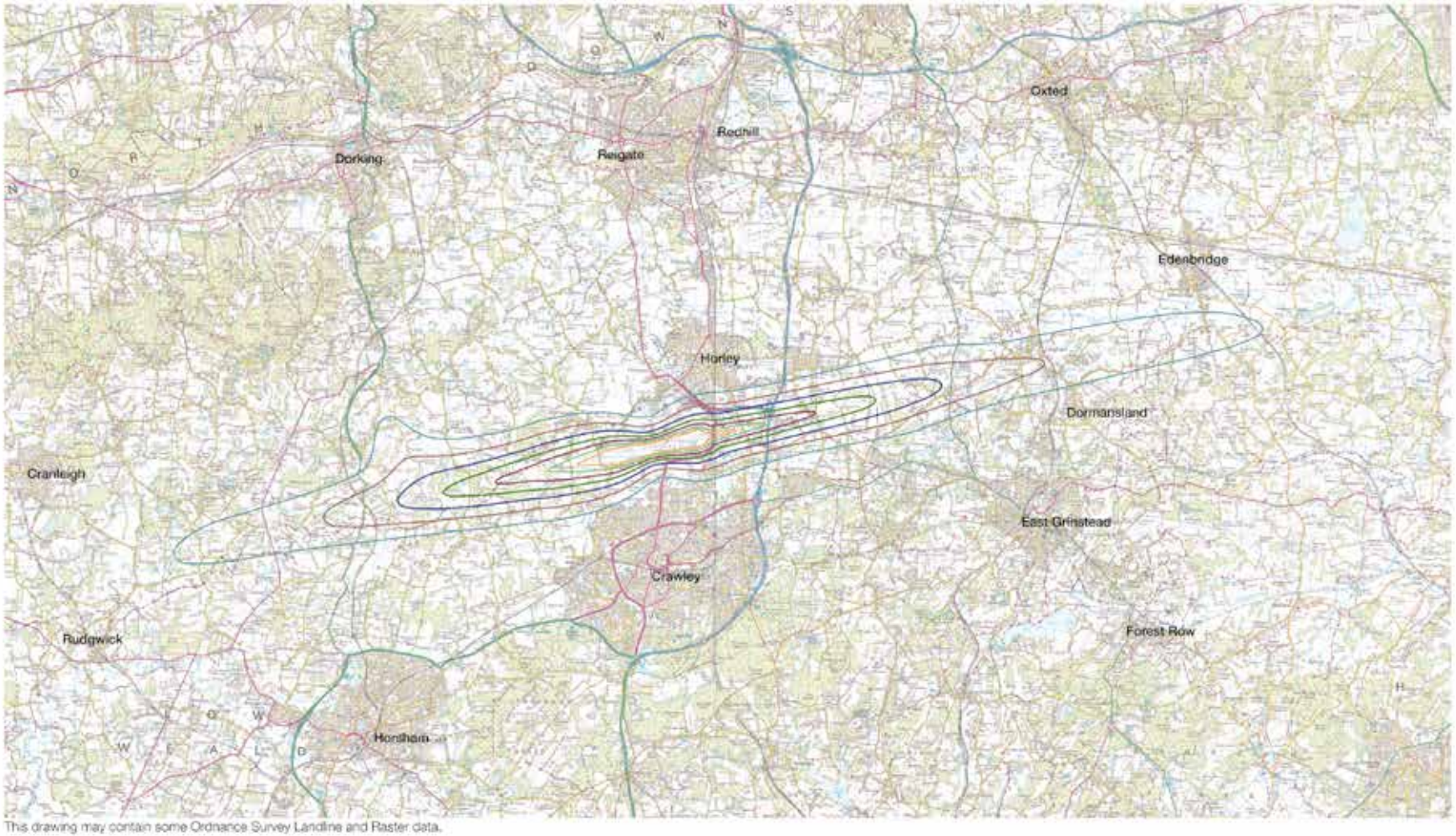
N



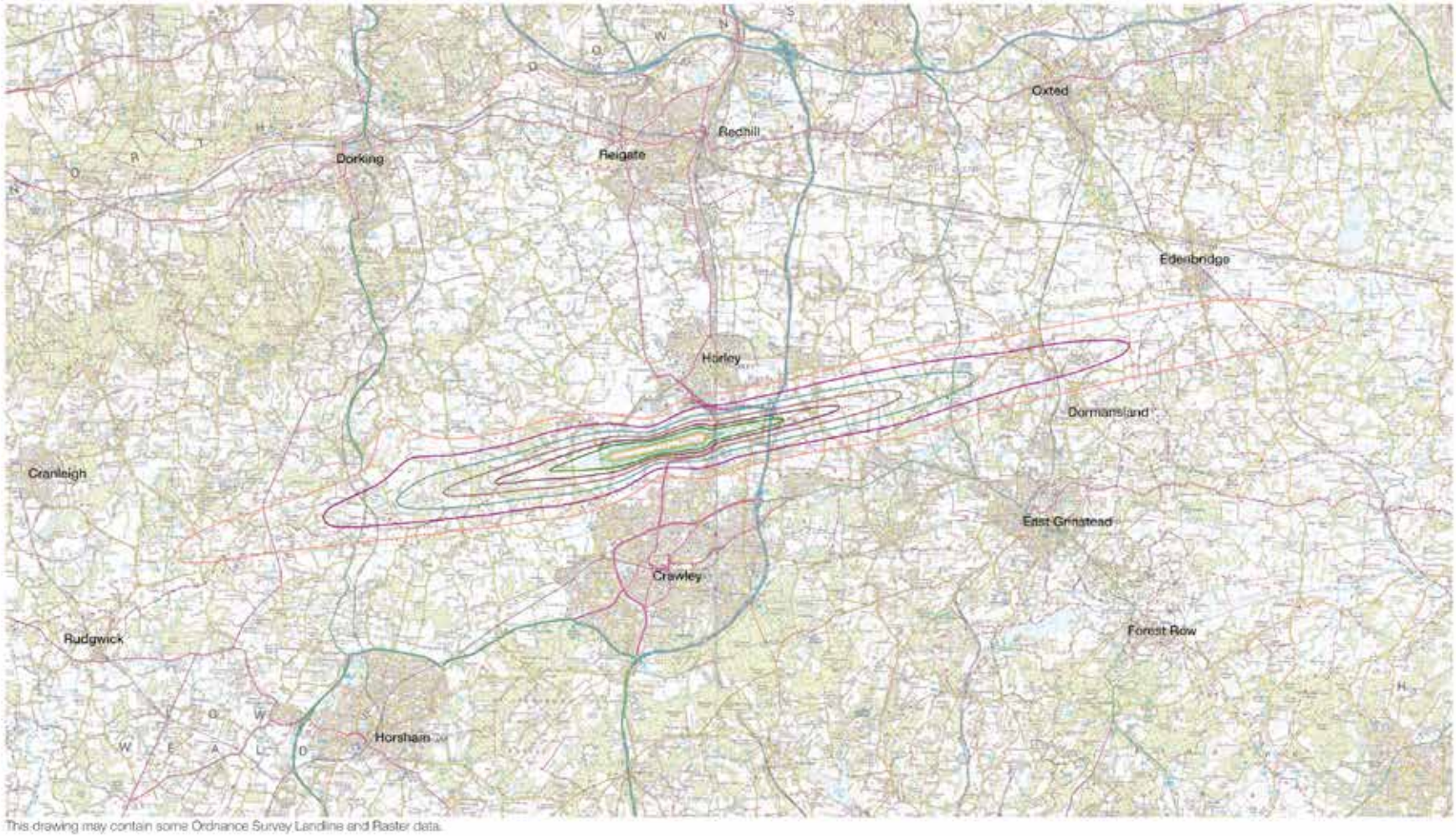
PLAN 14 - Air Noise Map. Leq Contours - Summer Day - 2017



PLAN 15 - Air Noise Map. Leq Contours - Summer Night - 2017



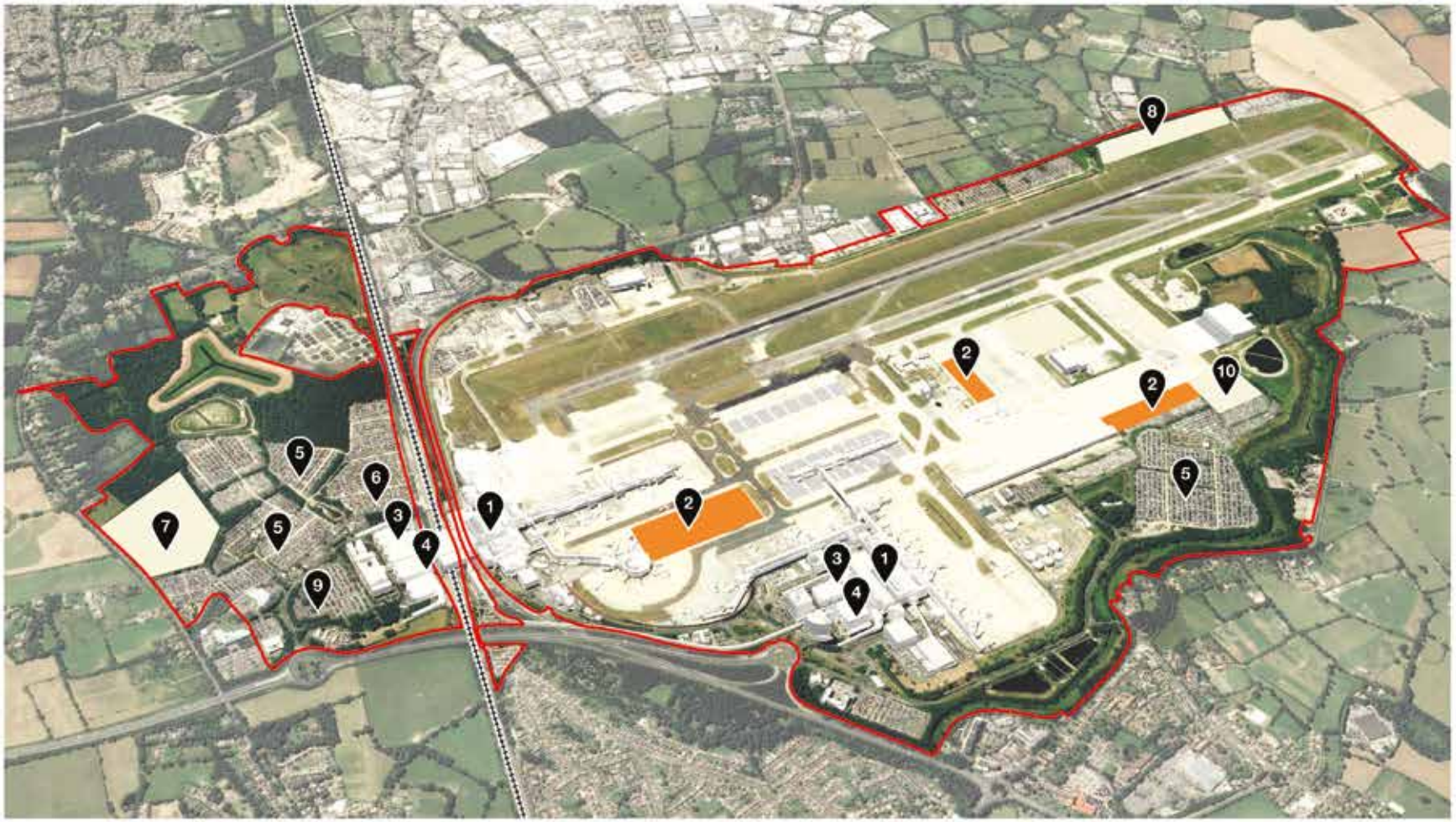
PLAN 16 - Air Noise Map. Leq Contours - Summer Day - 2022



48 dB 60 dB 69 dB
51 dB 63 dB 72 dB
54 dB 66 dB
57 dB

N

PLAN 17 - Air Noise Map. Leq Contours - Summer Night - 2022



PLAN 18 - Airport Layout Main Runway - 2032

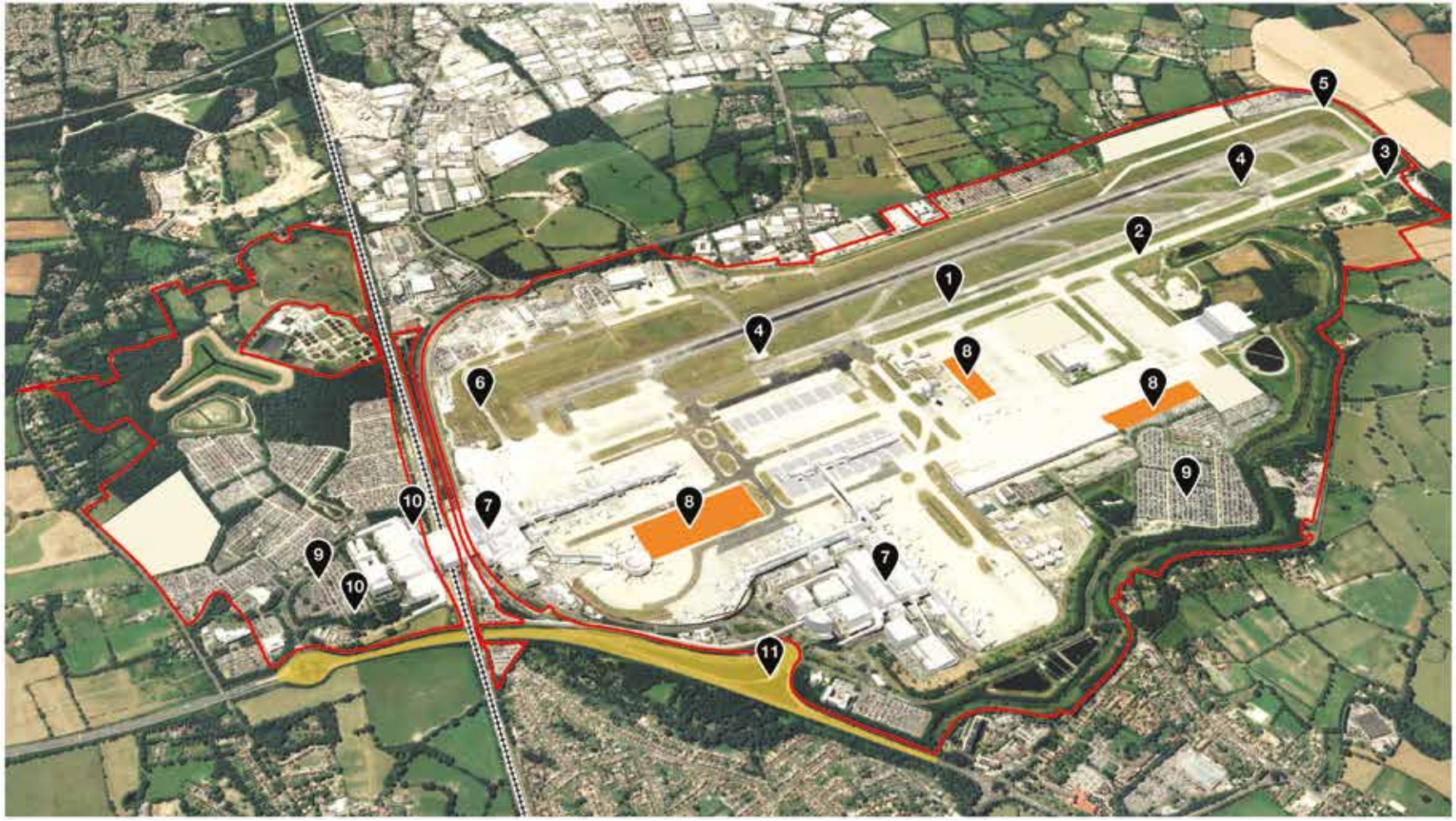
(Additional infrastructure compared to 2022)

Anticipated or potential developments

1 Terminal improvements including security and bag-drop
2 One pier project (in one of the three location options shown
3 Forecourt improvements
4 Additional bus/coach station capacity
5 Partial decking of surface car parking
6 Robotic parking technology
7 Additional car parking area
8 Additional car parking area
9 Office / hotel development
10 Site for new hangar

Airport Boundary

N



PLAN 19 - Airport Layout Standby and Main Runway - 2032

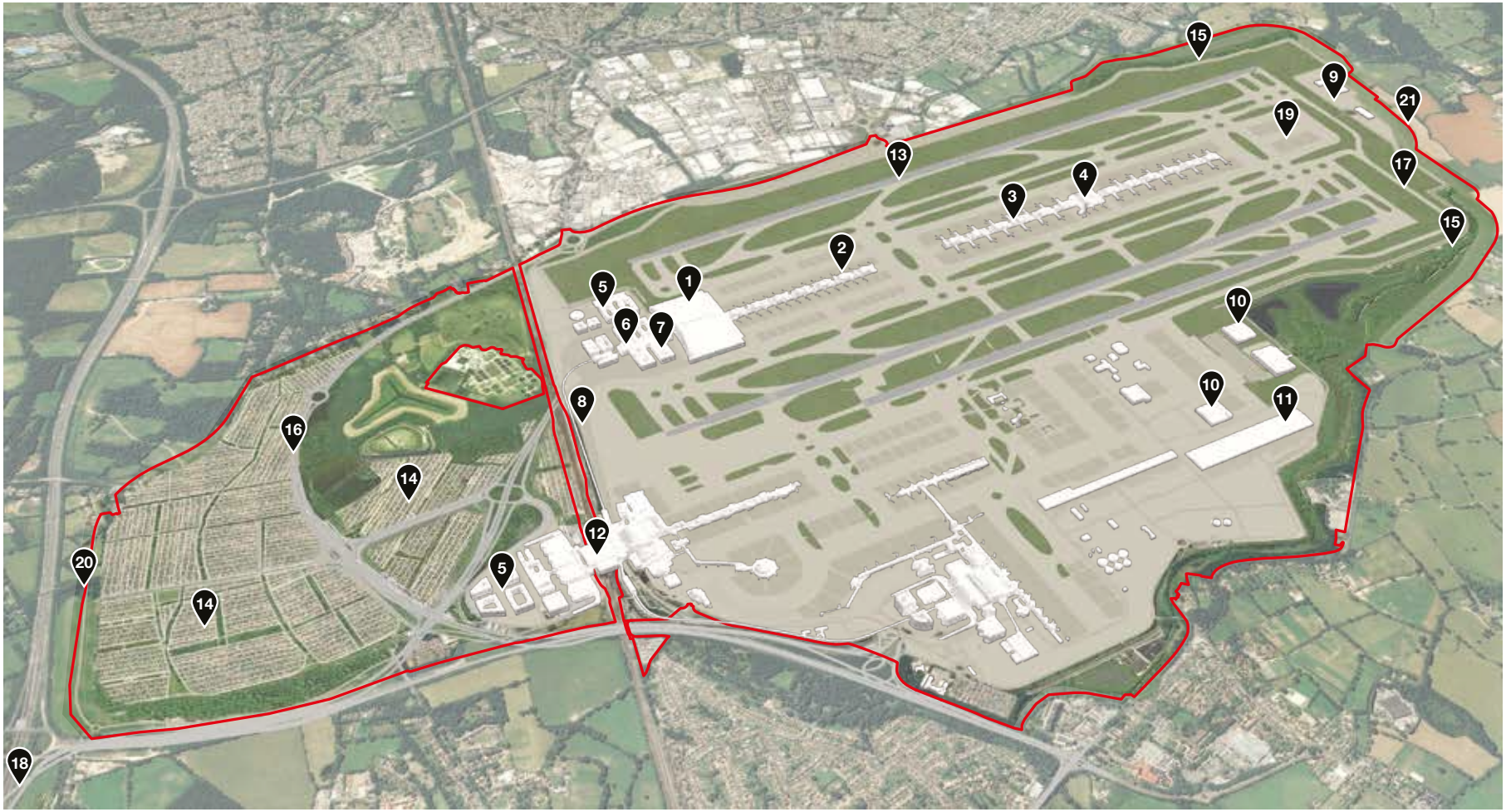
(Additional infrastructure compared to 'main runway only' in 2032)

Anticipated or potential developments

1 Widen existing standby runway
2 Relocate Juliet taxiway
3 New reserquencing/holding area
4 Reconfigure existing Rapid Exit Taxiway
5 New end-around taxiway
6 Existing taxiway used as end-around taxiway
7 Terminal improvements
8 One further pier project (in one of the three location options shown)
9 Additional decked/MSCP parking
10 Additional hotel/office development
11 Additional road improvements

Airport Boundary

N

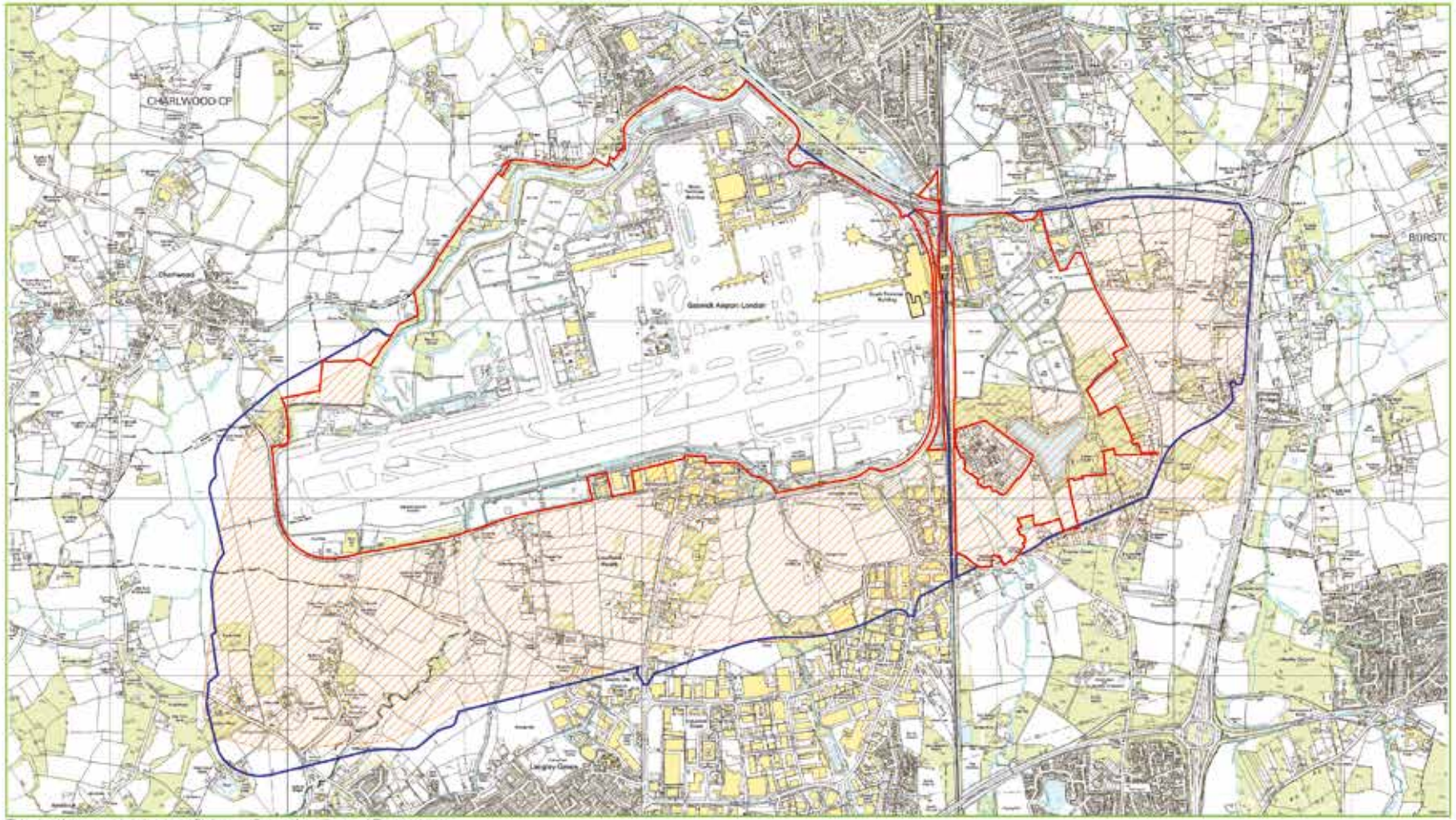


1 New Terminal Building
2 Contact Pier
3 Remote Pier
4 New Control Tower
5 Offices
6 Carpark
7 Hotels
8 People Mover System
9 Support Accomodations
10 New Hangar
11 New Cargo
12 Gatwick Gateway
13 New South Runway
14 Long Stay Cark Parks
15 New Noise Bund
16 A23 Diversion
17 End Around Taxiway
18 New M23 Sliproad
19 New Remote Stands
20 Balcombe Road diversion
21 River Mole diversion

Airport Boundary

N

PLAN 20 - Airport Layout Additional Runway



This drawing may contain some Ordnance Survey Landline and Raster data.

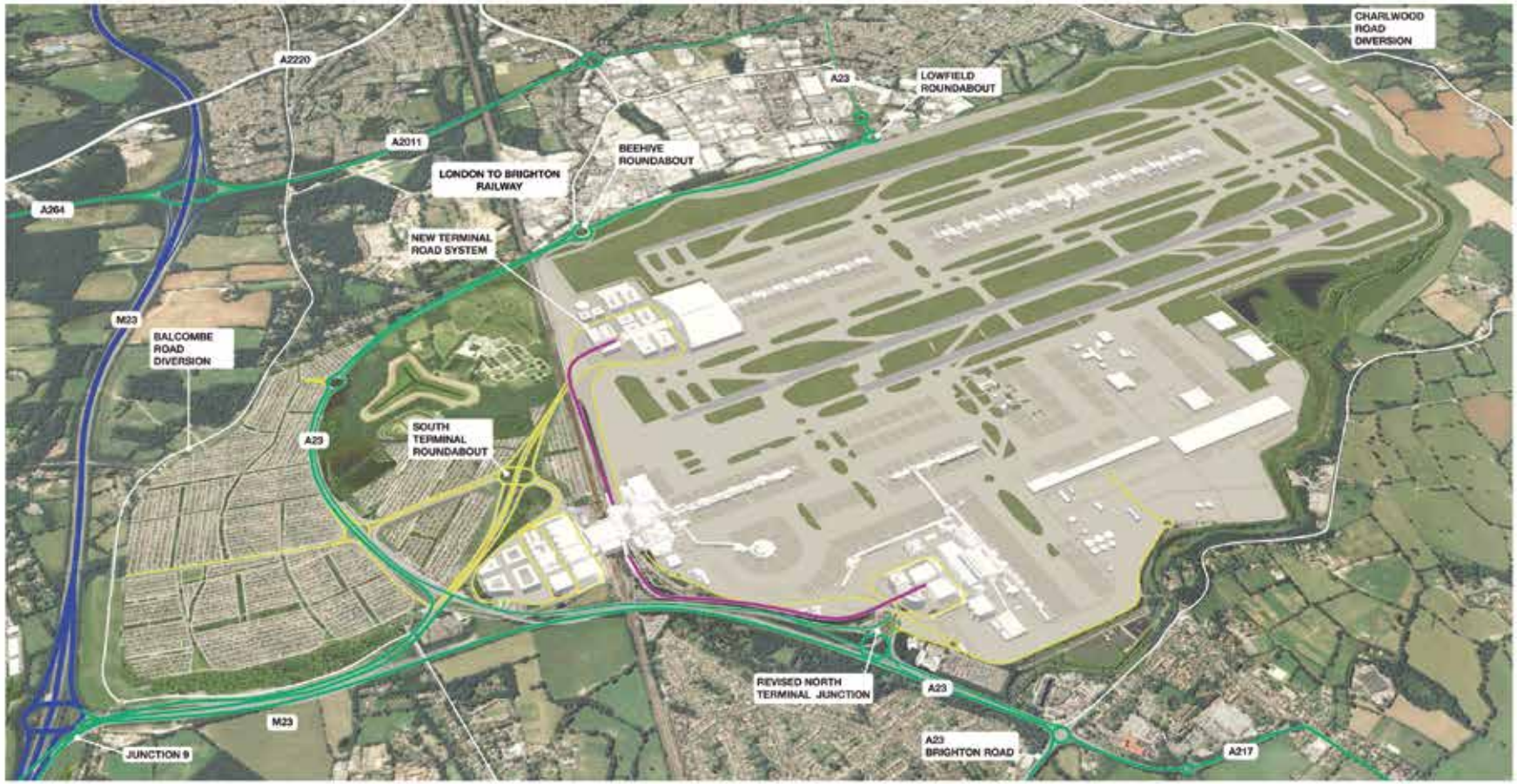
Existing Airport Boundary

Proposed Additional Runway Airport Boundary

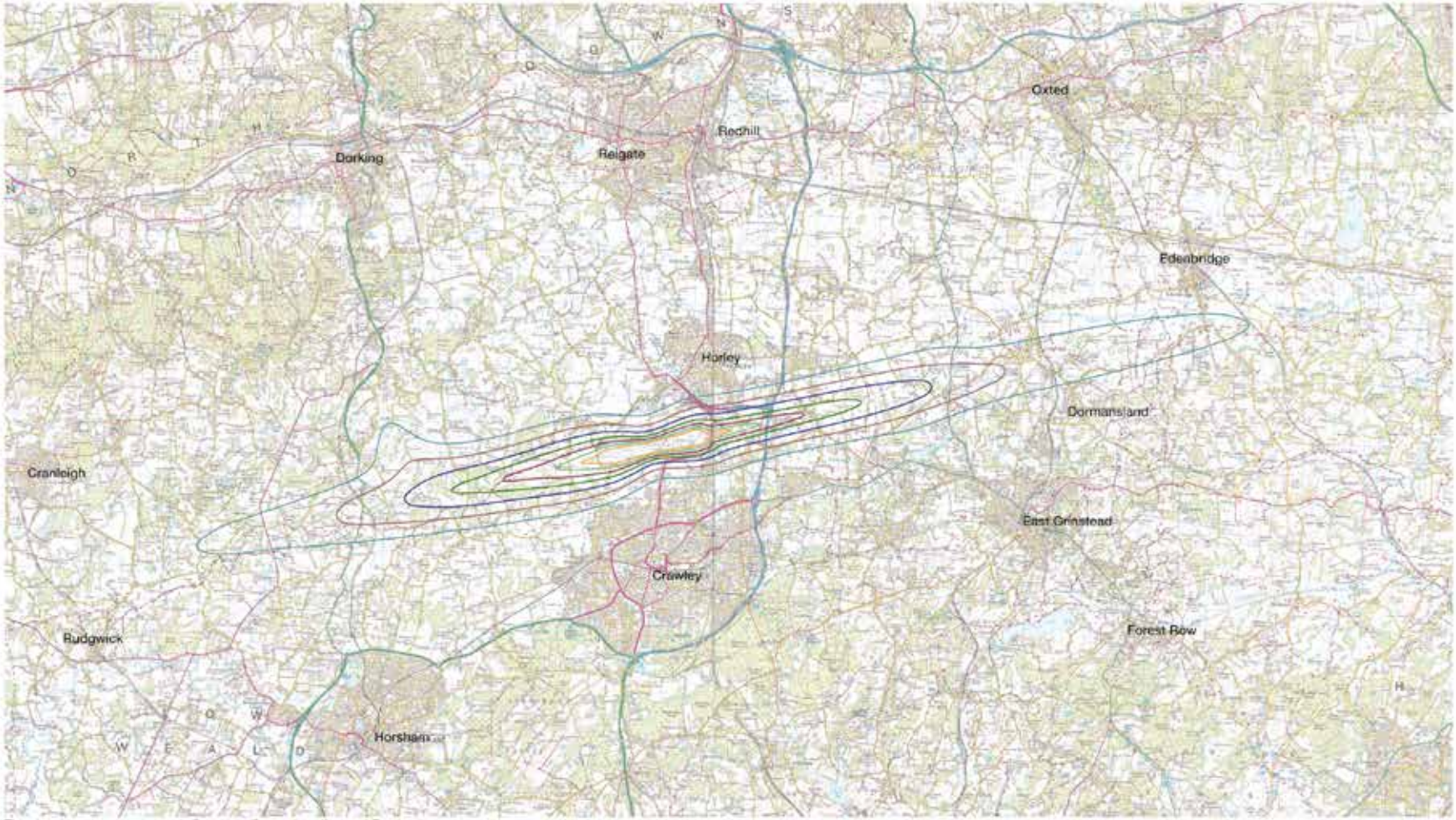
Land Currently Safeguarded For The Additional Runway

N

PLAN 21 - Safeguarded land Additional Runway



PLAN 22 - Surface Access Additional Runway



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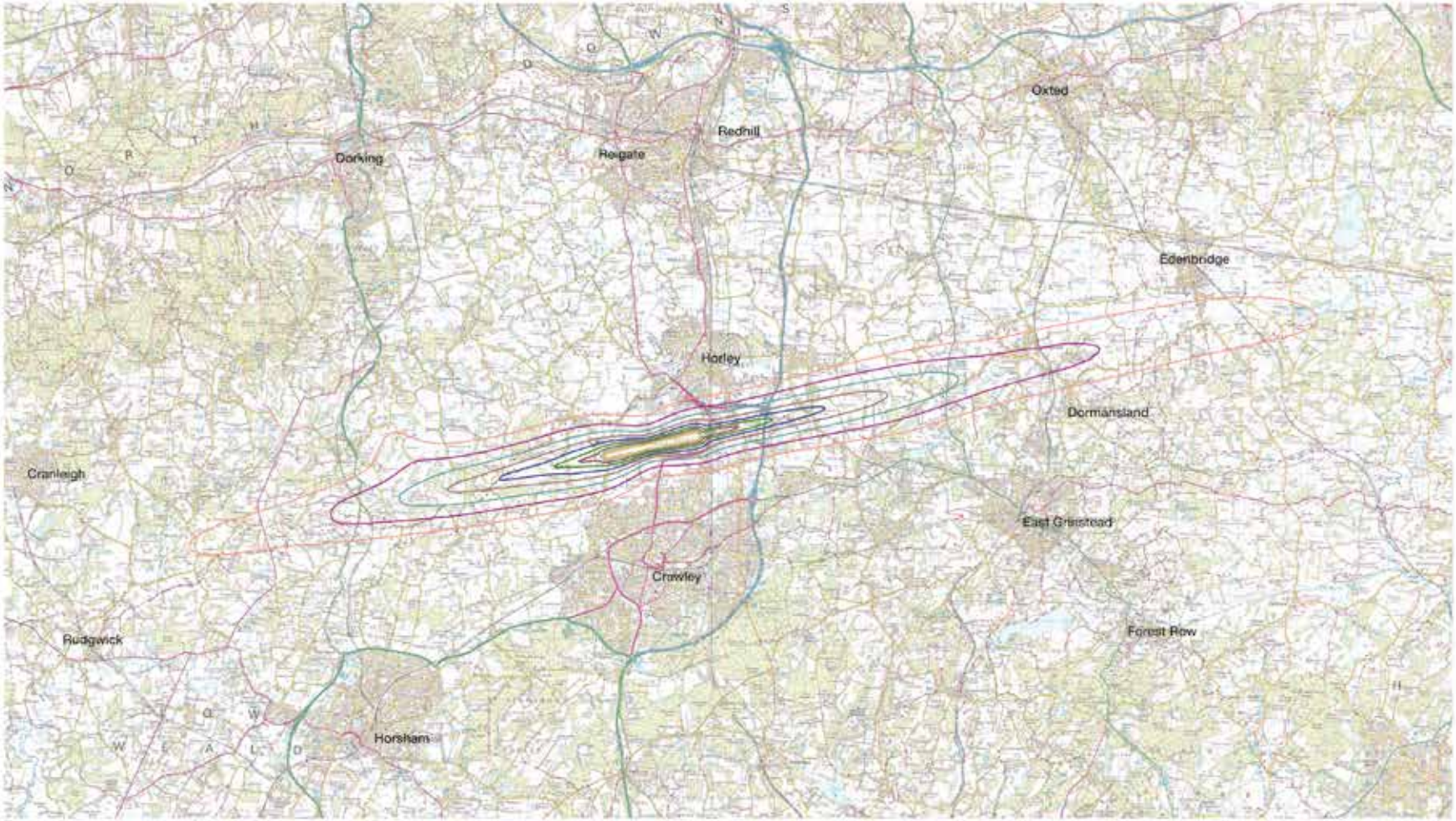
PLAN 23 - Air Noise Map. Main Runway - Leq Contours - Summer Day - 2028



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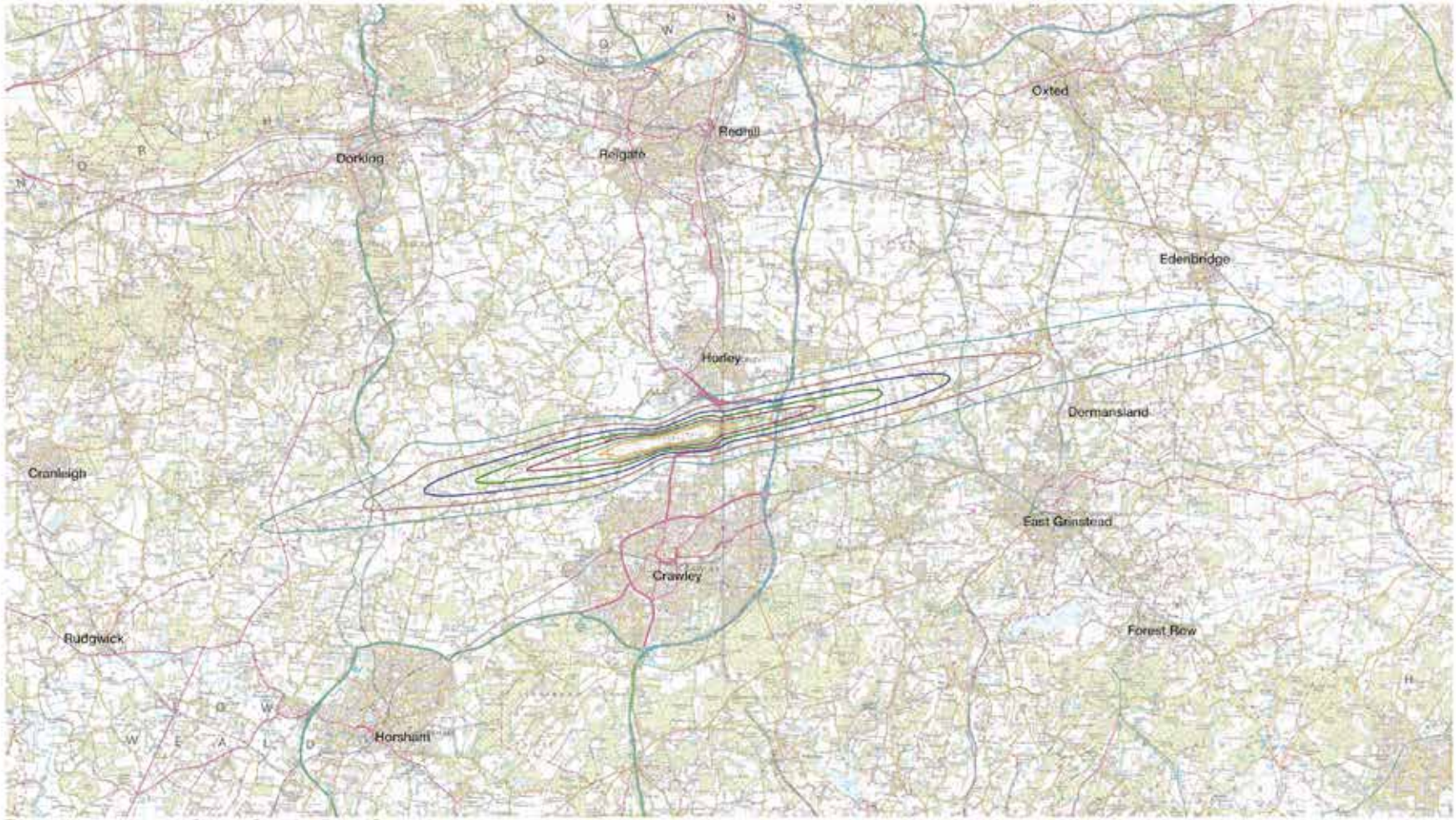
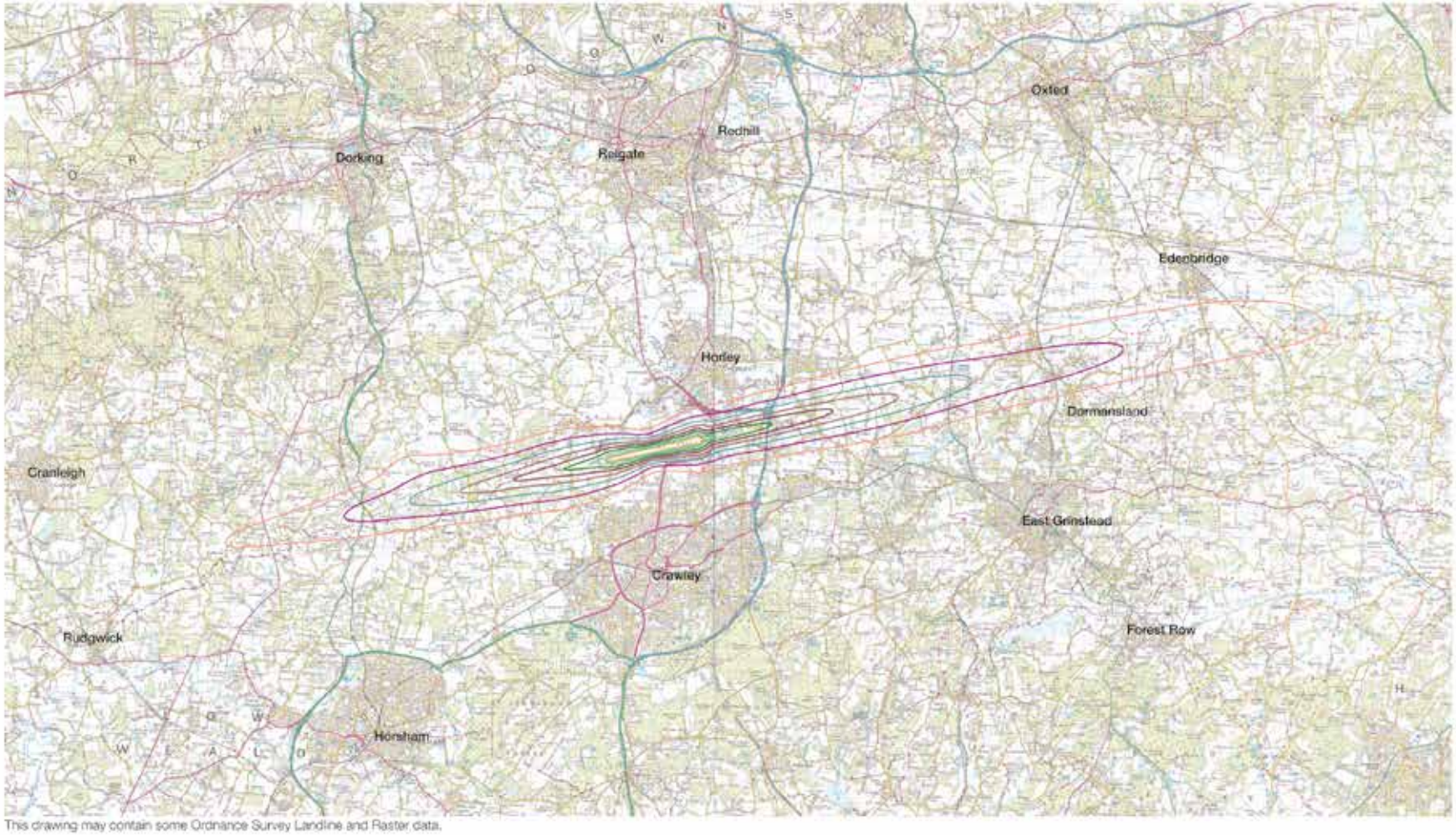
PLAN 24 - Air Noise Map. Main Runway - Leq Contours - Summer Night - 2028



This drawing may contain some Ordnance Survey Landline and Raster data.

PLAN 25 - Air Noise Map. Main Runway - Leq Contours - Summer Day - 2032



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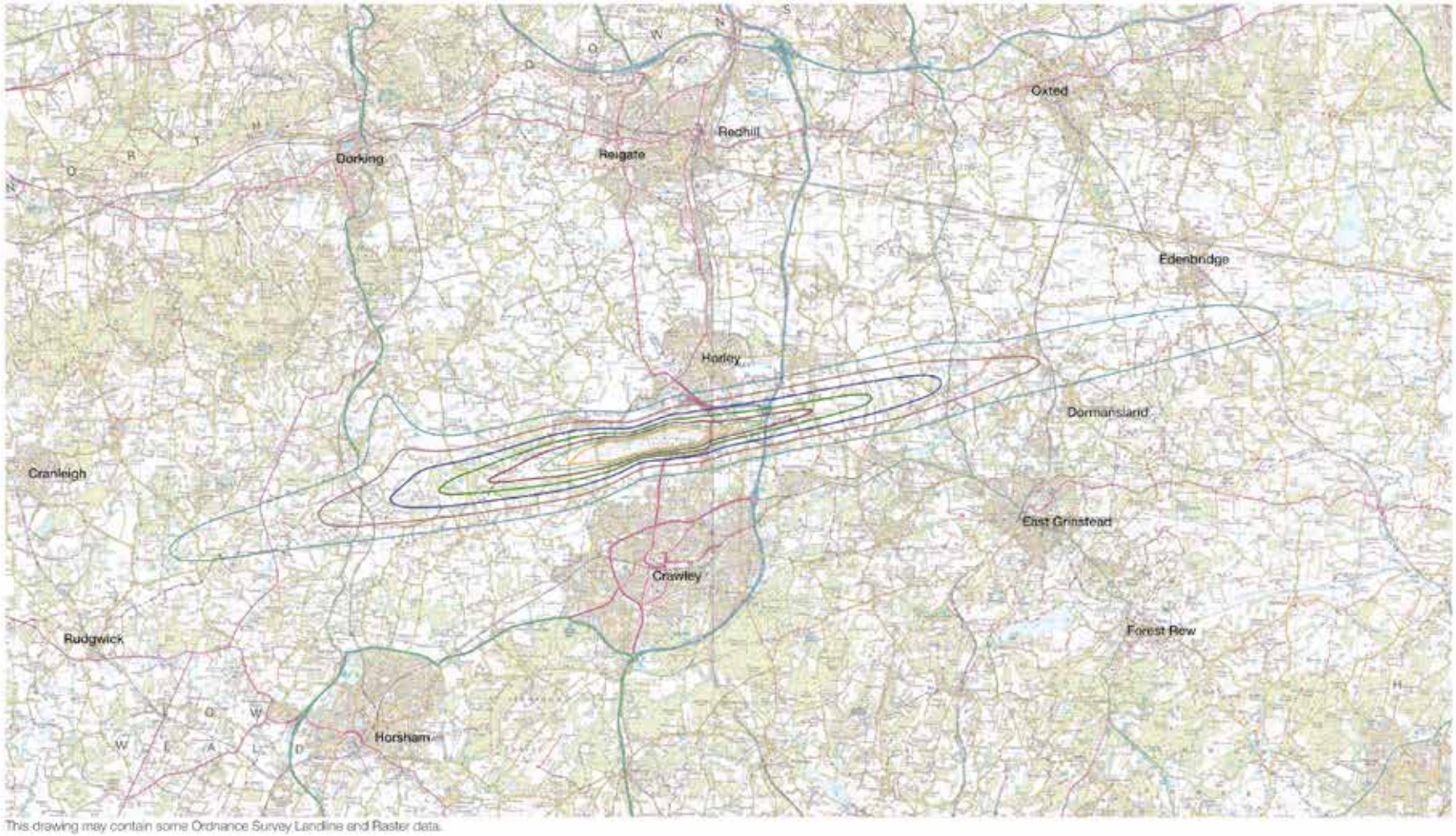
PLAN 26 - Air Noise Map. Main Runway - Leq Contours - Summer Night - 2032



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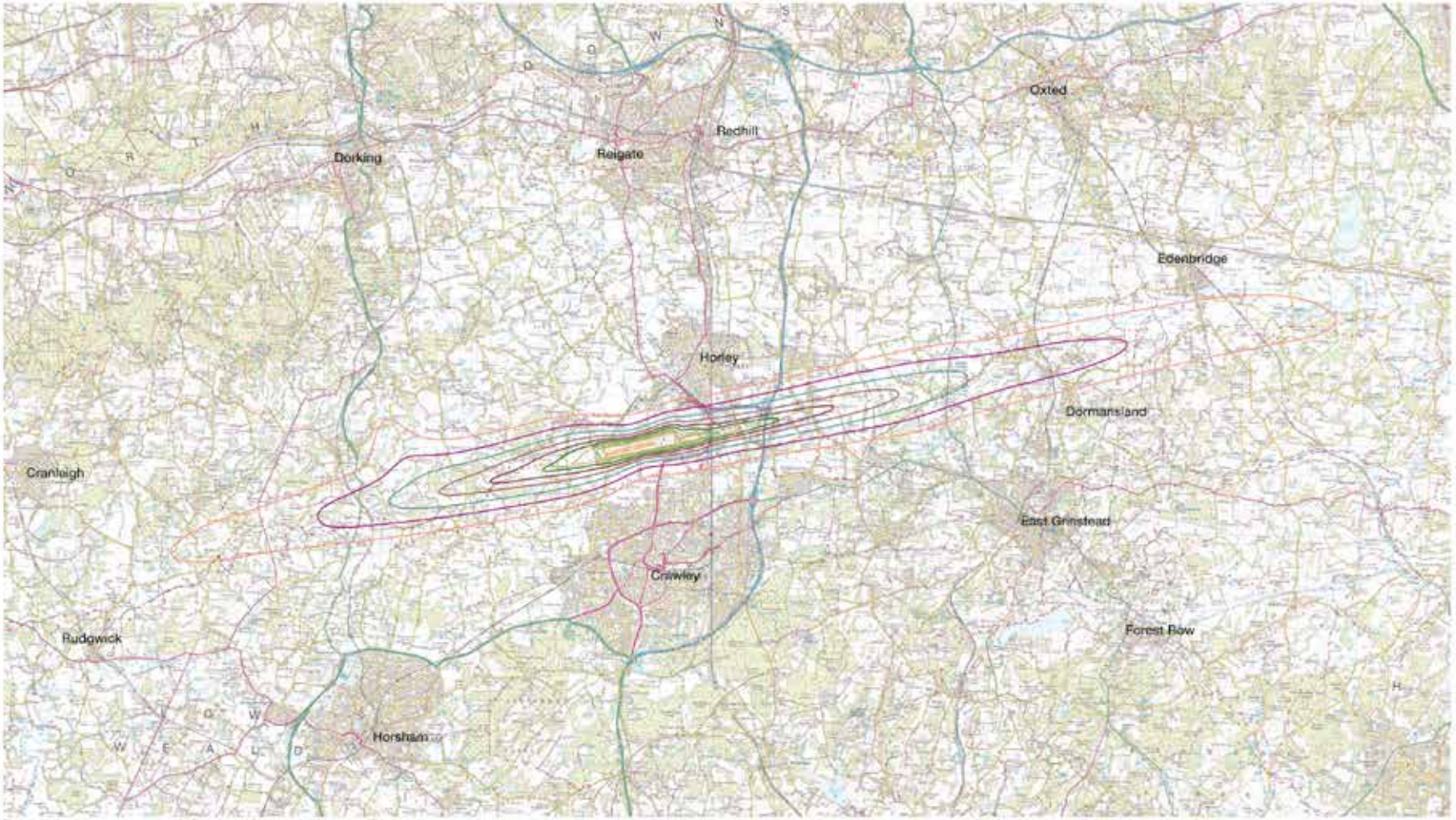
PLAN 27 - Air Noise Map. Standby and Main Runway - Leq Contours - Summer Day - 2028



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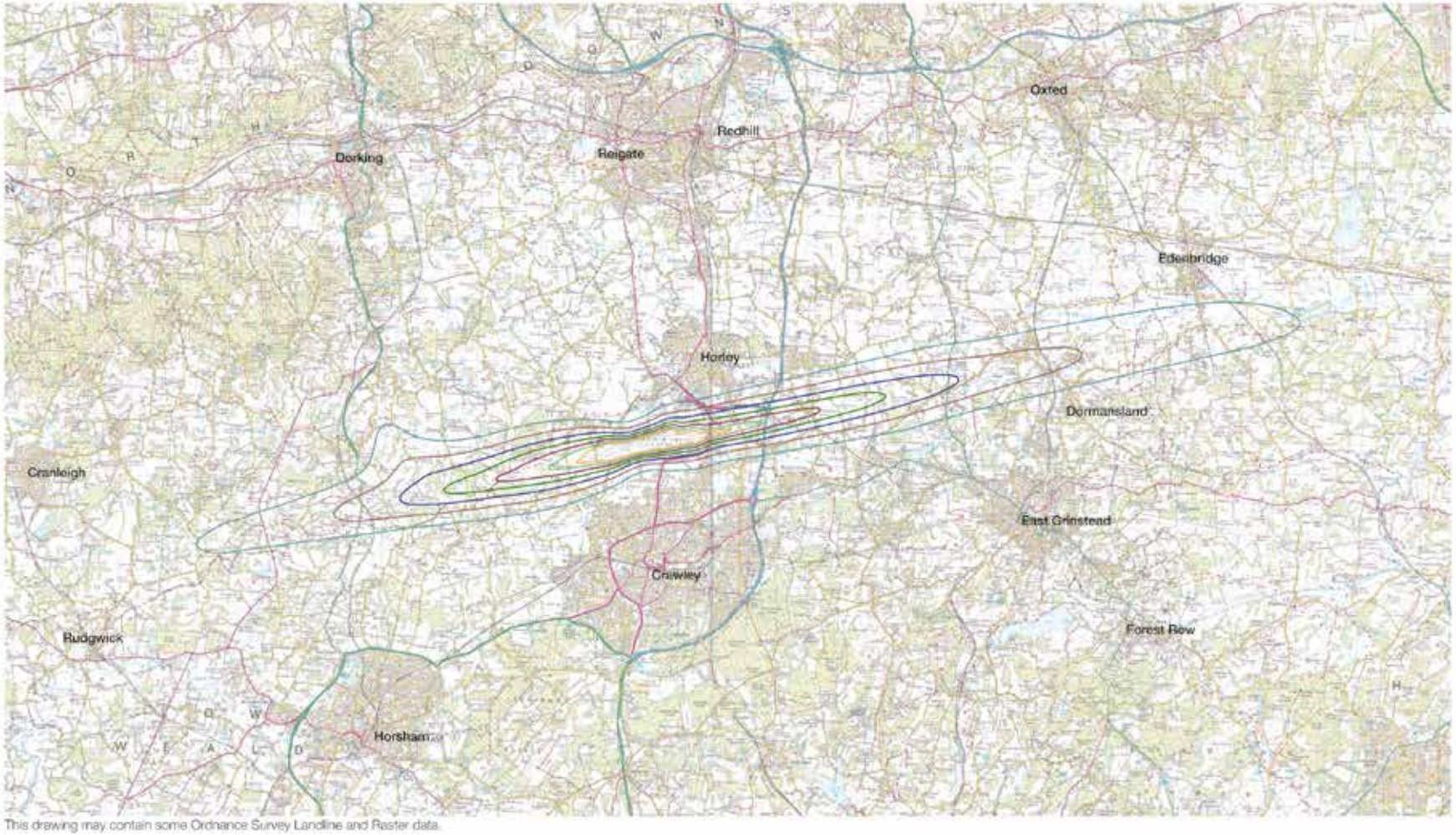
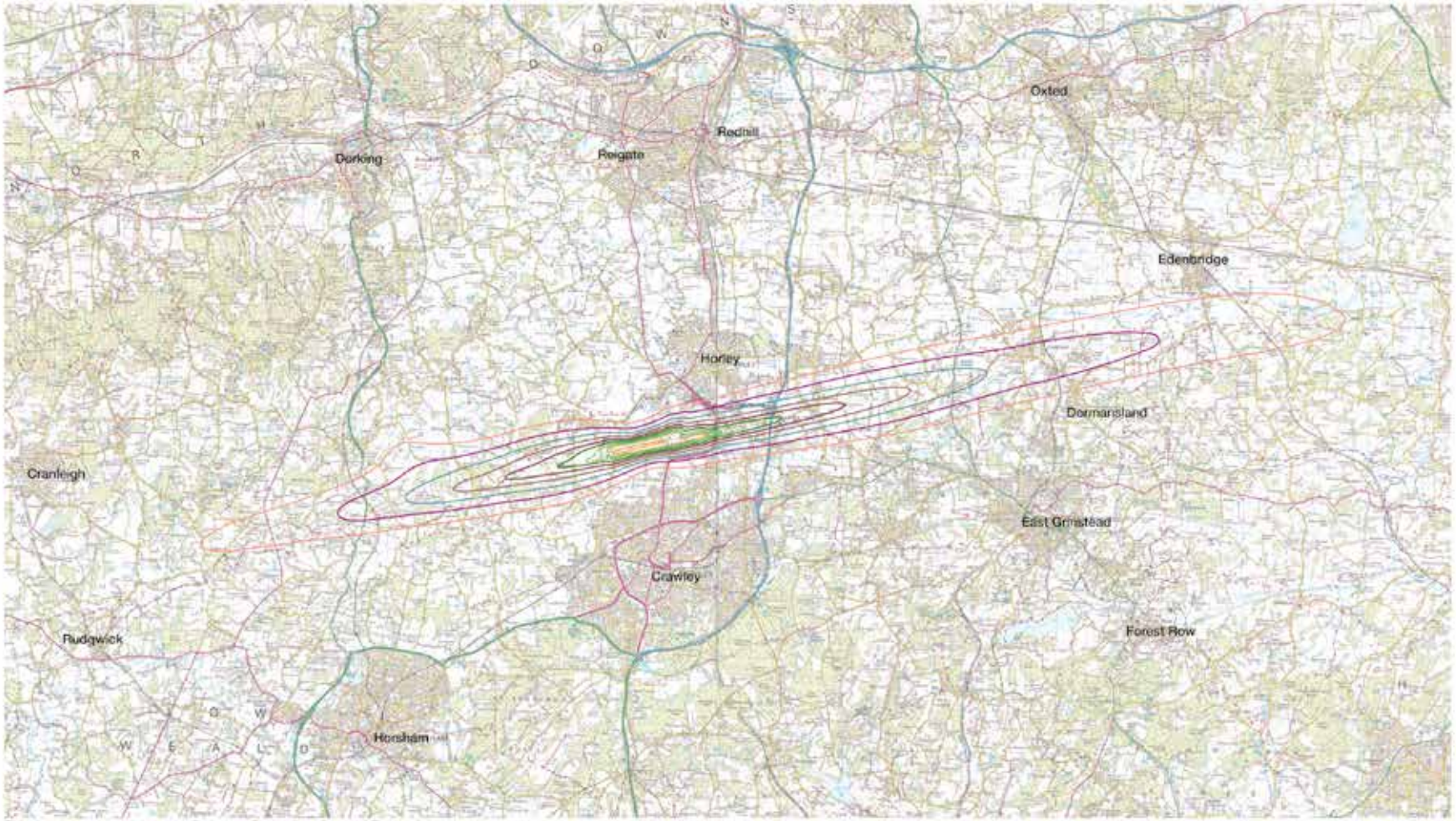
PLAN 28 - Air Noise Map. Standby and Main Runway - Leq Contours - Summer Night - 2028



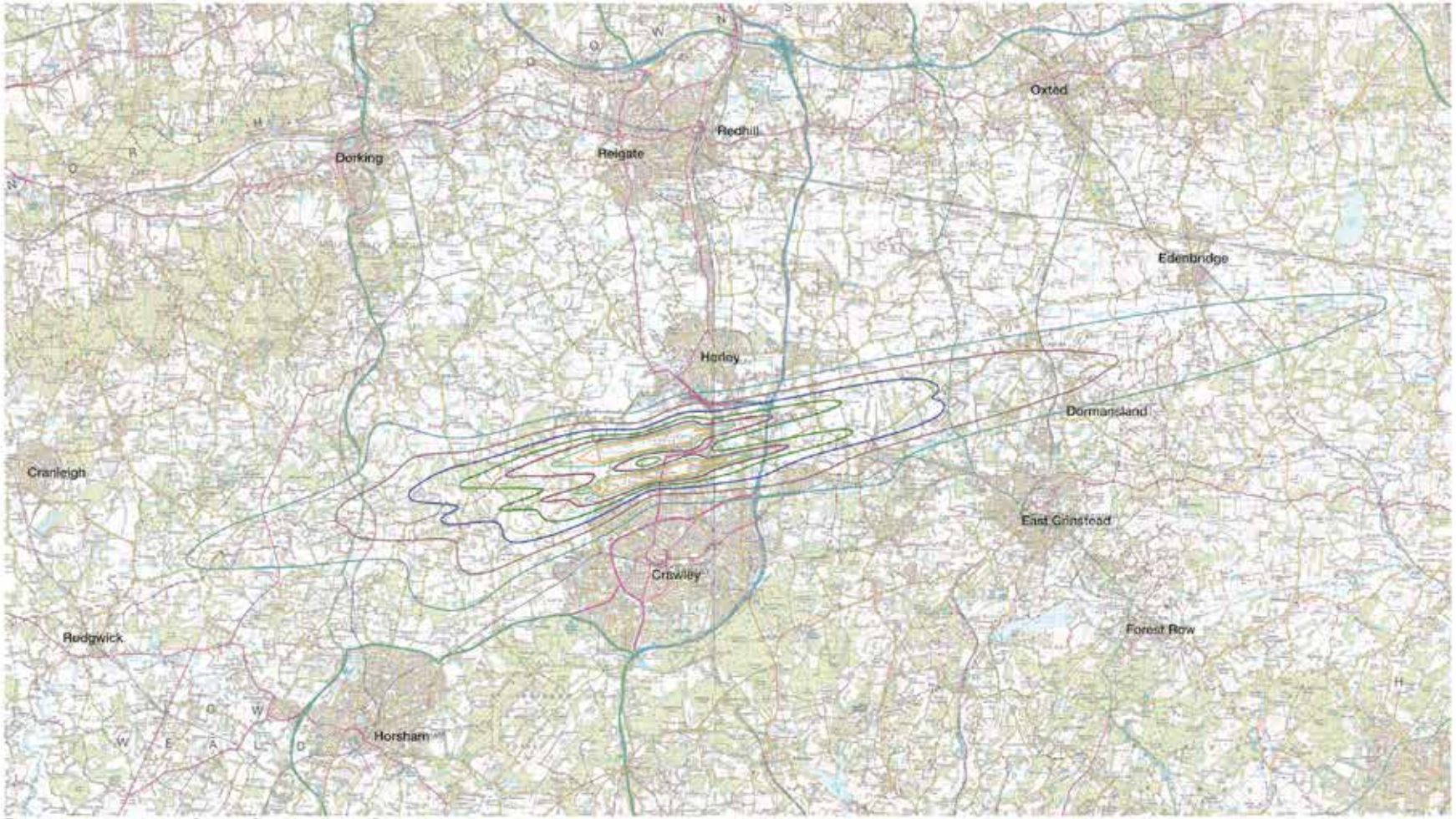
This drawing may contain some Ordnance Survey Landline and Raster data.

PLAN 29 - Air Noise Map. Standby and Main Runway - Leq Contours - Summer Day - 2032



This drawing may contain some Ordnance Survey Landline and Raster data.

PLAN 30 - Air Noise Map. Standby and Main Runway - Leq Contours - Summer Night - 2032



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PLAN 31 - Air Noise Map. Additional Runway - Summer Day - 2040

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