



# A Second Runway for Gatwick

Our April 2014 Runway Options Consultation

YOUR LONDON AIRPORT  
*Gatwick*



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# Foreword



In its Interim Report published in December 2013, the Airports Commission included Gatwick in its shortlist of potential locations for the next runway in the UK. In 2015, the Airports Commission will recommend to Government where the next runway should be built.

We recognise that the local communities around Gatwick will have many questions about what a second runway at Gatwick would mean for them. The purpose of this consultation is to provide information about our options for a second runway at Gatwick and to give you an opportunity to tell us what you think about them.

Every year, Gatwick contributes around £2 billion to the South-East's economy. We enable businesses to prosper, tourism to flourish, and 21,000 people to say they are proud to work at Gatwick.

I, and my team, know that the extensive social and economic benefits that Gatwick creates must be balanced with our responsibility for managing and where possible reducing our impact on the environment and local communities. We are committed to doing this to increase the sustainability of our operations.

At the Commission's request, we will soon be providing more detailed information about the runway option at Gatwick which they have shortlisted. However, this consultation is important because we will use the responses we receive to refine our plans and to help us reach a firm decision on the option we prefer. We will then ask the Airports Commission to take that option forward for further consideration as part of its evaluation process and subsequent advice to the Government.

I hope that everyone with an interest in the future of Gatwick will participate in this consultation and help us to shape our plans.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Stewart Wingate', written in a cursive style.

**Stewart Wingate**  
Chief Executive, Gatwick



# Section 1: Our consultation



This section of the document sets out the background to this public consultation.

We explain the work of the Airports Commission, which has shortlisted a proposed second runway at Gatwick alongside proposals for an additional runway at Heathrow.

We discuss the process of safeguarding land for a second runway at Gatwick, and we confirm that we remain committed to honouring the 1979 agreement with West

Sussex County Council which prevents construction of a new runway before 2019.

We explain that we have proposed three options for a second runway at Gatwick, and that we have ranked these in a provisional order of preference.

This consultation ensures that, from an early stage, you have a voice and are able to influence our plans for a second runway by telling us what is important to you.



# Section 1: Our consultation

## CONTEXT

### The Airports Commission

In September 2012, the Government announced the setting up of an Airports Commission (the Commission), chaired by Sir Howard Davies, to consider the UK's runway capacity needs.

**In December 2013, the Commission published an Interim Report which shortlisted possible locations for a new runway in the UK. A proposed second runway at Gatwick was shortlisted alongside proposals for an additional runway at Heathrow.**

In 2015, the Commission will recommend to Government where the next runway should be built.

### Safeguarded land

In 2003, the previous Government called for land for a second runway at Gatwick to be safeguarded. This is reflected in local planning policies, which restrict development in the safeguarded area. A 1979 agreement with West Sussex County Council prevents construction of a new runway before 2019 and Gatwick remains committed to honouring this agreement. However, the 1979 agreement does not prevent development of a second runway at Gatwick after 2019.

### Development of Gatwick's runway options

Before a new runway can be built at Gatwick, its location must be decided. After considering a wider range of alternatives, we have identified three main options for the configuration of the runway and its associated infrastructure.

In our July 2013 submission to the Commission, we proposed three options for a new runway south of the existing runway. We have continued to develop these three options since then.

**As we explain in Section 3 of this document, we have now analysed the options and we have ranked these in a provisional order of preference, with Option 3 being our preferred first choice.**

This document provides information about the runway options we have been considering.

We have provided further policy context in Appendix 1.

We have provided, at the beginning of Section 2, a glossary of terms used in explaining our runway options.

### The Commission's Assessment of Gatwick

In paragraph 6.74 of its Interim Report, the Commission stated: *"Gatwick Airport Ltd has proposed that a new runway should be constructed south of the existing one. It has identified three options: close-spaced, wide-spaced/dependent operation and wide-spaced/independent operation. The Commission's assessment has focused on the last – a runway over 3,000m in length spaced sufficiently south of the existing runway (at least 1,035m) to permit fully independent operation. This offers the greatest increase in capacity while still having relatively low environmental and noise impacts compared with some other potential sites. The Commission will, however, keep this under review as it takes forward more detailed development and appraisal. The proposal also includes related new terminal facilities and taxiways between the new and existing runways."*

### The Commission's consultation

**The Commission has said that it will hold a national consultation in the autumn of 2014.**

It plans to present the promoters' refreshed designs of the schemes at Gatwick and Heathrow, and its assessments of the schemes' economic, social and environmental impacts and their viability.



# Section 1: Our consultation

The Commission has asked Gatwick to provide updated information for the Commission to assess. We will therefore provide further information on our Option 3, as requested, in May 2014.

## Our consultation

The Commission has also said that *“it will be important for the promoters of short-listed schemes to ensure that groups representing nearby residents and businesses, and other stakeholders such as passengers and airport users, have the opportunity to make their views known. The Commission therefore encourages scheme promoters to engage with and understand the views of these groups, and to report on this as part of their submissions.”*

We have therefore decided to launch this public consultation in April 2014 and to report the outcome of the consultation to the Commission (and more widely) in July 2014. We have included all three of our main runway options in the consultation document, and we have ranked these in a provisional order of preference, with Option 3 being our preferred first choice, for the reasons explained in Section 3 of this document.

Our plans for a second runway at Gatwick are a work in progress and we continue to refine our options. The reason for consulting on all the options is to ensure we are transparent, to hear people’s views on which option they prefer and why, and to help us to improve our plans for a second runway at Gatwick.

**By consulting now we can ensure that your views are taken into account as part of the Commission’s ongoing work.**

We have decided to do this not only because it is in line with the Commission’s guidance, but also because we believe it is important to ensure that people have a voice and are able to influence the development by telling us what is important to them.

## Our questions

We have set out in Section 5 of this document how you can find out more about our plans and give us your views.

Whilst we know that people will have differing views about whether Gatwick should have a second runway, this consultation does not address this question. There will be an opportunity to give views on whether a runway should be built at Gatwick or elsewhere when the Commission launches its own national consultation later this year.

# Section 1: Our consultation

## ABOUT THIS CONSULTATION DOCUMENT

This consultation document contains information about our shortlisted options for a second runway at Gatwick.

The document is organised in sections:

**Section 1** (this section) explains the purpose and context of this consultation;

**Section 2** provides details of our three shortlisted runway options; and explains their design features, economic benefits, and potential environmental impacts. The main differences between the options are the distance between the runways, the amount of land needed, the way the runways are used, and the passenger capacity;

**Section 3** compares the options and explains the ranking of our options and our reasons for this (subject to the outcome of this consultation);

**Section 4** explains how we work with our local communities and sets out how we propose to ensure that we compensate local communities most affected by development of a second runway;

**Section 5** explains how you can find out more about our plans for a second runway, and how you can give us your views, including details of the events which we are holding during the consultation period.

## NEXT STEPS

### Spring 2014

- We consult on our runway options (this consultation);
- We submit more information to the Airports Commission about our second runway proposals for Gatwick.

### Summer 2014

- We analyse all responses to this consultation;
- We improve our proposals by taking account of responses received;
- We submit the details of our preferred option to the Airports Commission;
- The Airports Commission assesses shortlisted schemes, including Gatwick.

### Autumn 2014

- The Airports Commission consults nationally on shortlisted schemes.

### During 2015

- The Airports Commission makes its recommendation to Government;
- Government decides whether to adopt Airports Commission recommendations.

## OUR CONSULTATION COMMITMENT

We take seriously our commitment to consult those interested in or affected by our airport's operation. This consultation is an opportunity for everyone with an interest in the future of Gatwick to help to shape the development of the airport.

We want to make sure that information is available to everyone who wishes to review it, and that anyone who wishes to express a view has the opportunity to do so.

We cannot promise to accommodate every suggestion made, but we will consider every view submitted to us and if we can respond positively, we will do so. If we can't, we will explain why.

## Section 2: Our runway options



This section of the document explains the three runway options.

In Section 2.1 we explain features which are common to all three options, including the runway length of 3.4km, the location of the runway south of the existing runway and parallel to it, the location of cargo and aircraft maintenance facilities in the northern area of the airport, the diversion of the river Mole to the west of the airport, and the diversion of the A23 to the east.

In Section 2.2 we explain the differences between the options, including the distance between the runways, whether or not we build a new terminal between the runways, the way the runways are used, how many passengers would use the airport, and the amount of land we would need.

In Section 2.3 we explain our Airport Surface Access Strategy, including our plans for the Gatwick Gateway, a new high quality interchange to make connections between modes of transport easier and create new journey opportunities.

In Section 2.4 we set out the environmental effects of our options in terms of land and properties affected, air noise, ground noise, air quality, ecology, water, heritage, landscape and visual impacts.

In Section 2.5 we explain the economic effects of a second runway at Gatwick, including the number of jobs that we expect would be created and the value added to the economy as a whole by a two runway Gatwick.

# Section 2: Our runway options

## GLOSSARY OF TERMS

Section 2 uses some technical terms to explain our options. These are summarised here:

**“Airside”** means the secure area of an airport, located beyond the security checkpoint.

**“Apron”** is a paved area containing the aircraft stands.

**“Automated People Mover (APM)”** is a driverless shuttle vehicle operating on a fixed track. Gatwick currently has one APM which runs between the North and South Terminals.

**“Capacity”** means the number of passengers that an airport’s facilities are designed to accommodate.

**“Culvert”** is a structure allowing water to travel beneath a road, railway or other piece of infrastructure. The River Mole currently runs under Gatwick in a culvert.

**“Dependent”** means movements on one runway must pause when the other runway is in use.

**“Existing runway”** is Gatwick’s main runway (called 08R/26L).

**“Ha”** means hectares.

**“Independent”** means movements on one runway are not affected by the other runway.

**“Landside”** means all areas of an airport located before the security checkpoint, including all publicly accessible areas, car parks, check-in zones, arrivals hall and surface access facilities.

**“Mid-field”** is used to refer to the area which would be between Gatwick’s existing runway and the proposed new runway.

**“Mid-field apron”** is our term for a new apron which we may build in the mid-field. The mid-field apron is a feature of options 2 and 3.

**“Mixed mode”** means both runways are used for landing and take-off.

**“Movement”** or **“Air Traffic Movement”** (ATM) means a flight landing or taking-off at Gatwick.

**“Movement rate”** means a number of ATMs per hour possible with a particular runway and taxiway layout and operating mode.

**“Mppa”** means million passengers per annum and is a measure of throughput.

**“New terminal”** is the term we use to describe the terminal which we may build in the mid-field as part of the second runway development.

**“Northern Apron”** is our term for Gatwick’s existing apron serving the North and South Terminals.

**“North Terminal”** and **“South Terminal”** are the two existing terminals at Gatwick.

**“Operating mode”** means the way runways are used at an airport. Runway operating modes are described as dependent or independent, and segregated or mixed.

**“Parking stand”** (also “stand”) means the area of an apron on which an aircraft is parked, refuelled, loaded and unloaded.

**“Passenger terminal”** (also “terminal”) is a building designed to enable passengers to transfer between surface transport and aircraft. Amongst other things the terminal contains check-in areas, security checkpoint, baggage handling, departure lounges, an arrivals area and baggage reclaim.

**“Passenger throughput”** means the number of passengers forecast to pass through the airport in any given year.



# Section 2: Our runway options

**“Pier”** is a building providing passenger access to the aircraft parked around it. Gatwick South Terminal’s existing piers are numbered 1, 2 and 3. North Terminal’s existing piers are 4, 5 and 6. Pier 1 is currently being replaced with an upgraded facility.

**“Planning capacity”** means a forecast number of passengers used as a basis for design and assessment purposes.

**“Remote pier”** is a pier not directly connected to the terminal, usually connected to the terminal by an APM.

**“Runway”** is a paved surface designed for the landing and take-off of aircraft.

**“Runway alternation”** in segregated mode, means switching the arrival and departure runway for a period of time (for example half the day).

**“Runway capacity”** would be the theoretical maximum number of ATMs possible per annum for a given movement rate taking account of restrictions on night flights.

**“Runway separation”** means the distance between the two runway centre lines. Independent operation is possible with runway separation greater than 760m.

**“Resilience”** means ability to recover quickly from an operational disruption.

**“Respite”** in this context means a period of relief from noise from aircraft flying overhead. Respite can be provided by runway alternation or by reducing the frequency of movements.

**“Safeguarded Area”** In 2003, the previous Government called for land for a second runway at Gatwick to be safeguarded. The safeguarding is reflected in local planning policies. Development in the safeguarded area has since been restricted in case a second runway is supported by future national policy. The safeguarded area boundary is shown on Plans 1B, 2B and 3B at the back of this document.

**“Segregated mode”** means one runway is used only for landings, and the other used only for take-offs.

**“Stand-by runway”** is Gatwick’s secondary runway (called 08L/26R), used only when the main runway is not available for use. Gatwick’s main and stand-by runways are too close together to be used at the same time, so the stand-by runway is usually used as a taxiway.

**“Surface access”** means all types of ground based transport used to reach an airport, including rail, public transport and road.

**“Taxiway”** is a paved surface used by aircraft to move between a runway and an apron.

# Section 2: Our runway options

## OUR OPTIONS EXPLAINED

We considered all realistic possibilities for a second runway at Gatwick, taking into account the existing layout and the local landscape. We considered locations north-west and south of the existing single runway airport as well as locations to the south which spanned the railway. We discontinued work on locations which, for environmental, cost or other reasons, we regarded as undeliverable.

In Section 2 we explain the three runway options which remain under consideration. All three options are south of the existing runway and parallel to it.

The main differences between the options are:

- Distance between the runways (runway spacing);
- How the runways are used (operating mode);
- Passenger capacity (linked to the operating mode and runway spacing);
- Whether or not a new terminal is proposed between the two runways;
- The amount of land needed (linked to runway spacing).

The three options are summarised below:

	Option 1	Option 2	Option 3
Runway spacing	585m south of existing runway	1,045m south of existing runway	1,045m south of existing runway
Operating mode	Dependent segregated mode	Independent segregated mode	Independent mixed mode
2050 Passengers (Range)	64-68 mppa	80-85 mppa	85-90 mppa
2050 Passengers (Throughput assumption)	66 mppa	82 mppa	87 mppa
Terminals	Two (no new terminals)	Three (one new terminal)	Three (one new terminal)
Layout plan	Plan 1A	Plan 2A	Plan 3A
Boundary plan	Plan 1B	Plan 2B	Plan 3B
Air noise contour plan	Plan 1C	Plan 2C	Plan 3C

We have forecast passenger growth for each option, and these forecasts suggest throughput could be between 85 - 90 mppa by 2050 under Option 3. We have then used a throughput assumption for each option, for the purposes of sizing facilities, and to inform our assessments of the options. We have also used an assumption for the capacity of the existing single runway airport, as explained in Section 2.1

# Section 2: Our runway options

## 2.1 Features common to all options



The following features are common to all three options:

### Planning capacity of the existing airport

With the mix of flights we see today at Gatwick, our capacity is between 40 and 45 million passengers per annum (mppa). For planning purposes, so we can design the right size of future terminal and apron infrastructure, we have used a planning figure of 42 mppa as the capacity of the existing single runway airport.

We have thought about the future of both terminals in the context of a second runway, including possible replacement of the existing terminals. Both terminals have been expanded and refurbished in recent years and a significant investment programme is ongoing. We would therefore keep the existing North and South Terminals in all three options.

### Aircraft types

Aircraft can be categorised by size:

- Code F (e.g. Airbus A380) wingspan up to 80m;
- Code E (e.g. Airbus A350 & Boeing 747) wingspan up to 65m;
- Code D (e.g. Airbus A300 & Boeing 767) wingspan up to 52m;
- Code C (e.g. Airbus A320 & Boeing 737) wingspan up to 36m.

It is important for us to understand which aircraft types would use Gatwick because aircraft size affects the overall layout of the airfield, including runway and taxiway width and spacing.

We have services by the largest aircraft, the A380, which is Code F. New infrastructure should be constructed to international

# Section 2: Our runway options

## 2.1 Features common to all options

standards so we would build the new runway to the Code F standard width for new runways of 60m. Gatwick's existing runway is 45m wide. The A380 can operate from 45m wide runways and does so routinely at airports throughout the world, so the existing runway will not need to be widened.

We would need Code F taxiways so that A380 aircraft can taxi between the new runway and its parking stands. However not all taxiways would need to be built to Code F width and the category of each taxiway will meet the needs of the aircraft that need to use it.

### The length of the new runway

Gatwick's existing main runway (called **08R/26L**) has a usable length of 3,311m in the 08 (easterly) direction and 3,407m in the 26 (westerly) direction.

- Runway 08 operations occur when the wind is from the east, which is typically 26% of the time;
- Runway 26 operations occur when the wind is from the west, which is typically 74% of the time.

Gatwick's parallel stand-by runway, 200m to the north of the main runway, is called 08L/26R. The stand-by runway cannot be used at the same time as the existing runway. The stand-by runway, which is used very infrequently for take-offs and landings, is shorter with a length of 3,040m in the 08 direction and 2,700m in the 26 direction.

We have considered how long the new runway needs to be, taking account of the following:

- **Maximum and minimum lengths:** A runway of less than 2,000m would be unusable by all but the smallest commercial aircraft types, whilst a runway of 3,500m is long enough to accommodate all aircraft types on any route;
- **Land:** The longer the runway, the more land is needed and the greater the cost of construction;
- **Topography:** At Gatwick, any runway longer than approximately 2,000m would have an impact on trees on the high ground to the west of Gatwick. This means we need to manage the woodland in this area to ensure the safe operation of aircraft;
- **Operational impact:** A shorter runway would have greater operational restrictions on its use. This would mean that some aircraft types would have to use the existing runway. This would result in less runway capacity;
- **Resilience:** There would be times when the existing runway needs to be closed, typically for planned maintenance. At these times, the closer the new runway is to a length of 3,500m, the more of the normal operation can be accommodated.

We have concluded that the new runway should be around the same length as the existing runway, i.e. 3,400m.

### Runway crossings

In all three options the new runway would be south of the existing runway. So to access the existing terminals and northern apron some aircraft would need to taxi across the existing runway. We explain how this would work for each option in Section 2.2.

In Appendix 2 we describe a possible alternative solution of providing taxiways around the ends of the existing runway.



# Section 2: Our runway options

## 2.1 Features common to all options

### Cargo and aircraft maintenance facilities

We would locate all cargo and aircraft maintenance operations together in the northern apron. This enables good landside and airside access and is consistent with our current published master plan.

We have indicated how many aircraft maintenance hangars we believe would be needed in 2050 for each option. The need for any hangars, and their size, will depend on the requirements of the operator. We understand the potential visual impact of large aircraft hangars in the area between Charlwood and Povey Cross, and we will minimise the visual impact of the facilities by attention to screening and landscaping, which we will consider in detail as proposals for the maintenance facilities are developed.

### Car parking location

All three options affect some of the existing passenger and staff car parking. We need to allow for replacement of lost parking spaces and extra spaces to support the additional passengers.

Short stay parking would be provided near to each terminal. All long stay and staff car parking would be east of the railway. We believe this is the best location as it is close to the main road access from the A23 and the M23 and is also close to South Terminal. The terminals would be reached by a regular shuttle bus.

### Other airport related ancillary facilities

A two runway Gatwick would need additional support facilities such as offices, hotels, flight catering, an energy centre, emergency service facilities, waste processing and other infrastructure. We have identified space for these facilities and we show this on Plans 1A, 2A and 3A at the back of this document.

### Airport surface access strategy

Our Surface Access Strategy is set out in Section 2.3. The overall strategy is the same for all options. The strategy will deliver safe, reliable journeys by road, rail, walking and cycling to and from Gatwick and for all traffic using local routes. For all options, the main road access would be via the A23 from Horley and Crawley and the M23 at Junction 9. The A23 would be re-routed to provide a better through route for local traffic.

We set out in Section 2.3 our vision for the Gatwick Gateway. The Gatwick Gateway will provide a new interchange for rail and other public transport services, and investment at the railway station will provide a better experience for passengers and the local community alike.



### Environmental design

We have shown on plans 1A, 2A and 3A at the back of this document where we would need to divert roads or rivers. Road and river diversions comply with guidance from the Highways Agency and the Environment Agency.

The airport's new southern boundary would be influenced by the river and road diversions.

Where the new perimeter is next to green space we believe that landscaping and planting would be appropriate, and as this matures it would reduce visibility of the airfield. Where we think planting would be insufficient, or we think that further measures would be needed to reduce ground noise, we have identified locations for mounds to screen the airfield. These are called acoustic bunds. We would keep the existing acoustic bund to the north-west of the airport and the existing noise wall to the north of the airport.

# Section 2: Our runway options

## 2.1 Features common to all options

East of the railway line, the route for diversion of the A23 is designed to avoid loss of listed buildings and minimise loss of woodland. The A23 also avoids the scheduled monument at Tinsley Green.

The Crawley Sewage Treatment Works is not affected by the A23 route.

South-east of the airport in the Manor Royal area, the boundary would fall within the existing industrial areas close to the railway line. Aircraft would queue here before departing on the new runway so we would build a section of noise wall here to reduce aircraft noise.

The A23 would then run to Rowley Farm (which is Grade II\* listed). The Farm would be lost to development in Options 2 and 3 and retained in Option 1.

Crawter's Brook runs west of Rowley Farm. It would be diverted at the point where it crosses under the new A23 to run west around the airport in a new river corridor. The new river channel would allow the Brook to follow a more natural course within its corridor than it does at present.

After the A23 turns southwards, the river corridor of Crawter's Brook would continue west and form the new boundary of the airport. At the point where the new channel reaches the River Mole, the water courses would join and then run in the same channel. Just west of this point, a landscaped earth bund would rise and run westwards ending to the north of Ifield Hall. The river corridor would then provide the outer boundary to the airport, around the western ends of the new and existing runways, until it re-joins the current channel of the River Mole to the east of Charlwood.

On plans 1B, 2B and 3B at the back of this document we have shown the existing single runway airport boundary, the proposed boundary for each option, and the boundary of the safeguarded area.

### Flood risk management

Our proposals take into account the predicted effects of climate change by incorporating measures to ensure the design does not increase flood risk to areas inside or outside the airport.

In December 2013, unexpected and unprecedented levels of river flooding and rainfall at and around Gatwick led to serious disruption to passengers. David McMillan, a Non-Executive Director of Gatwick has undertaken a full review of events and has recommended clear actions to ensure the airport becomes more resilient to flooding and that potential impacts of flooding at Gatwick on communities upstream and downstream of the airport are assessed.

We fully endorse the report's recommendations. The findings and recommendations will set flood alleviation measures for the existing single runway airport and for any future two runway airport.

A £5 million programme of activity has already started to improve resilience to flooding and £30 million has been made available to help implement the report findings in full. We are committed to implementing all the short-term actions which have been recommended by October 2014, and we will be working closely with the Environment Agency and other relevant agencies on long-term flood planning for the airport.

A copy of the report, detailing all recommendations, is available at [www.gatwickairport.com/consultation](http://www.gatwickairport.com/consultation)

We are working with the Environment Agency to plan a flood attenuation project on the River Mole at Ifield just upstream of the airport which will reduce flood risk in the

# Section 2: Our runway options

## 2.1 Features common to all options

Upper Mole catchment, protecting the airport from flooding, as well as protecting other properties that are currently at risk. We expect this project to proceed with or without the second runway.

For all options we would remove the River Mole from its existing culvert under the existing runway, and divert the river around the new western boundary of the airport. This new river corridor would provide a better aquatic habitat and reduce flood risk. Plans 1A, 2A and 3A at the back of this document show the proposed corridors for diversion of the River Mole and Crawter's Brook.

We will provide balancing ponds to manage and control surface water flows into local rivers. These would also contain measures to transfer any polluted run-off water for treatment. The size and location of the ponds would be subject to detailed design development, but locations are shown indicatively on Plans 1A, 2A and 3A at the back of this document.

### Construction phasing

Before the new runway can be built, the A23 needs to be re-aligned and rivers diverted. Once the land is available and road and river diversions are completed, the runway can be completed and brought into service.

Passenger demand will grow over the years and we would not need to build at the outset the whole of the development for which we would seek development consent. We would accommodate demand by building in phases. The design of facilities would be flexible to allow for future reconfiguration.

### Opportunity to re-provide lost commercial premises

All options result in the loss of existing industrial and commercial property around the airport, including to the south in Lowfield Heath and in City Place. Options 2 and 3 also result in the loss of property in the northernmost parts of Manor Royal. We have identified an opportunity to provide replacement land in the area east of the railway. Whilst not strictly for airport operational requirements, we believe this is an important opportunity to address the impacts of these options. The allocation of land for this purpose would require some intensification of other land use, for example decking of car parking.

We would be particularly interested in hearing the views of those local residents and businesses that would be affected by the second runway development (as well as the employers, companies and representatives of those whose premises would be lost) on this potential opportunity to provide replacement land for industrial and commercial use as part of the second runway development.

# Section 2: Our runway options

## 2.1 Features common to all options

### Minimising impacts on local communities

We are very aware that, although Gatwick brings economic and employment benefits, the airport also affects our local communities mainly through noise, air quality, views of the airport and additional traffic.

We are committed to maximising the sustainability of our operations. This means that we carefully consider the environmental, social and economic effects of everything we do, and try to find an acceptable balance between negative and positive impacts.

Our aim is to design the best airport we can, ensuring that we minimise the impact on our neighbours. In designing our runway options, we have sought to reduce and mitigate their predicted negative impacts and improve their environmental, social and economic performance.

We have managed to avoid some potential impacts through the careful positioning of the boundary. By this means we have avoided, for example, impacting some areas of ancient woodland, listed buildings and ancient monuments. We have also avoided a number of industrial, residential and commercial areas by making changes to boundaries and road alignments.

Other impacts cannot be completely avoided, but can be reduced. The measures we have discussed above will help to minimise environmental impacts felt by local residents and provide opportunities to improve the current situation. For example, our proposed noise and visual screening which enables us to reduce the visual and noise impact of the airport on neighbouring areas.

Nonetheless, because the airport needs land in order to grow, some loss of existing buildings and community facilities within our safeguarded boundary is unavoidable. Where this happens, we will work with affected people and organisations to agree how we will compensate for the loss, by providing monetary compensation, or by providing

replacement facilities in another location. We have set out the environmental effects of our options in Section 2.4.

Our proposed Gatwick Gateway will bring more employment locally and significant transport benefits for local communities, whilst the investment attracted by the second runway will bring more employment and opportunities for regeneration including in areas of south London and the south coast. We have explained the economic effects of a second runway development in Section 2.5

Where noise impacts remain, we have designed schemes to compensate affected people, and we provide more information about these schemes in Section 4 of this document.



# Section 2: Our runway options

## 2.2 Option descriptions



### Option 1: Southern close spaced parallel runway Dependent segregated mode

- In Option 1, the new runway would be closer to the existing runway than the minimum separation of 760m needed to provide independent operations;
- Therefore runway operations in Option 1 would be **dependent**. This would provide more capacity than a single runway, but it does not provide as much capacity as a pair of independent runways;
- For our planning, we have used a maximum combined hourly movement rate of **70 aircraft movements per hour**, compared to the 55 that is possible on the single runway;
- One runway would be used for arriving flights and the other used for departing flights. This is known as **segregated mode**;
- The runways in Option 1 are too close together to provide an additional terminal and stands in the space between them, so all such capacity would need to be accommodated in the existing North and South Terminals and northern apron.

Example of dependent segregated mode operations:

An aircraft in the final stages of landing on one runway will cause the temporary pause of operations on the other runway. An aircraft waiting to take-off on the other runway can line up but it will not be given take-off clearance until the landing aircraft has touched-down and is decelerating.

Option 1 is illustrated in Plan 1A at the back of this document, which shows the two runway airport as it would need to be when operating in 2050.

Plan 1B at the back of this document shows the single runway airport for comparison purposes, the proposed boundary for Option 1, and the Safeguarded Area boundary.

### Operation of the runways

All aircraft using the new runway would have to cross the existing runway to access the parking stands.

For air traffic control, it is better for aircraft to cross a departures runway than an arrivals runway. When crossing a departures runway, a departing flight can be cleared for take-

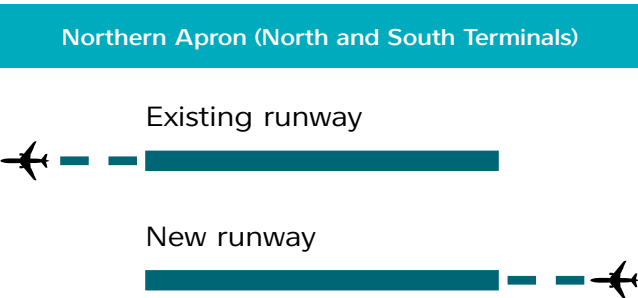
# Section 2: Our runway options

## 2.2 Option descriptions

off as soon as the crossing aircraft is clear of the runway. This is a very predictable and controllable operation. When crossing an arrivals runway, the time available for crossing is more variable depending on wind-speed, aircraft speed and the separation between landing aircraft.

For this reason we have assumed that for Option 1 the new runway would be used for arrivals and the existing runway would be used for departures (See Figure 1).

**FIGURE 1: METHOD OF RUNWAY OPERATION (WESTERLY OPERATIONS ILLUSTRATED)**



Although all arriving flights would need to taxi across the existing runway in Option 1, this would be unlikely to have any impact on runway capacity. This is because runway operations would be dependent, meaning that the time interval between departing flights has to be extended to allow for an arrival on the adjacent runway. This extended ‘gap’ between flights provides a natural crossing opportunity for aircraft taxiing across the runway to the apron.

### Traffic forecasts

We forecast that passenger throughput for Option 1 could be up to 68 mppa by 2050. We have adopted a figure for planning capacity in 2050 of 66 mppa.

Using the peak hour movement rate of 70 aircraft movements per hour we estimate that the movement and passenger

throughput of Option 1 would grow as shown in Table 1 below.

Table 1 Option 1 Planning Capacity	2030	2040	2050
Annual Movements	355,000	386,000	389,000
Annual Passengers	57 mppa	64 mppa	66 mppa

### Runway separation

The minimum runway separation needed for Option 1 is 585m.

This distance allows for twin parallel taxiways to be provided between the runways and enables taxiing aircraft to pass behind aircraft waiting to cross the runway.

This distance also allows for the possible future provision of taxiways around the end of the northern runway if needed, as explained in Appendix 2.

### Airport land take

Option 1 has the lowest overall land take of the three options. It requires 388ha of land additional to the existing airport, for all new infrastructure including necessary road and river diversions.

The proposed boundary for Option 1 is shown in Plan 1B at the back of this document and reflects our current estimate of additional land needed for the new infrastructure associated with Option 1. Plan 1B at the back of this document also shows Option 1 in the context of the safeguarded area boundary.

The proposed boundary for Option 1 falls within the safeguarded area boundary, with the exception of two small sections on the western and north-west side of the airport. This is due to inclusion of a land allowance for the River Mole diversion to the west of the airport.

We have also made a land allowance for the A23 diversion to the south of the airport. The A23 would be outside the airport operational boundary once built.

# Section 2: Our runway options

## 2.2 Option descriptions

### Terminal and apron capacity

All the terminal and apron capacity for Option 1 would be provided on the northern side of the airport.

Given that the expected capacity of the existing terminal and northern apron is around 42mppa, we would need an additional 24mppa capacity by 2050.

This would be achieved by expanding the North Terminal to the south and providing a new remote pier to the west of the terminal. This would take the capacity of North Terminal to around 45mppa which is approximately double its current capacity. The North Terminal can be expanded more easily than the South Terminal and space is available in the northern apron for a new remote pier.

The new North Terminal remote pier would provide new aircraft parking stands designed for a range of aircraft types from Code C to Code F size as required. The remote pier would be connected to North Terminal by an automated people mover (APM) system. This could run above the ground around the northern edge of the apron, or could be below the ground connecting more directly with the terminal extension.

We believe that doubling the capacity of North Terminal is technically feasible. However, the terminal would need to continue to operate during expansion, which does make the construction process significantly more complex and costly than building a new terminal in a non-operational environment.

### Ancillary support facilities

The existing cargo facilities would need to be removed and replaced to make way for the new remote pier needed to support the expansion of North Terminal. We have therefore allowed for 76,200m<sup>2</sup> of new cargo facilities on the site of the existing North Terminal long-stay car park. The car parking would be relocated to the land east of the railway.

The new remote pier would also require the removal of the Virgin Atlantic hangar on the northern apron, and the British Airways hangar south of the existing main runway would need to be removed to make space for taxiways serving the new runway.

We have allowed for three new hangars on the western boundary of the northern apron to replace lost capacity and to provide the additional capacity needed to support the growth of the airport.

### On-airport surface access infrastructure

For Option 1, the main features for surface access are as follows:

We would expand the North Terminal landside area to accommodate more demand. We would give priority to buses, coaches and authorised vehicles such as taxis. We would develop the South Terminal landside area into the Gatwick Gateway interchange with better bus and coach access as described in Section 2.3.

We would add one additional short stay car park at each terminal, adding 2,000 spaces in total.

We would add 16,800 long stay parking spaces on-airport, all located close to the M23 Junction 9 for easier access. Staff car parking would only rise by 900 spaces as we would be adopting enhanced measures to promote staff use of public transport.

We would build new access roads to the North Terminal and a new junction to link traffic to the A23, which would be separate from the airport access.

The existing shuttle link between the North and South Terminals (an automated people mover or APM) would have extra capacity by making the trains longer.

We would make road access to the South Terminal more direct from the M23 and provide new road links and junctions to improve access to the A23, which would be diverted further east.

# Section 2: Our runway options

## 2.2 Option descriptions

### Option 2: Southern wide spaced parallel runway Independent segregated mode

- In Option 2, the new runway would be far enough from the existing runway to enable independent operation of the runways;
- The method of runway operation under Option 2 would be **segregated** mode, meaning that one runway is used for arrivals and the other for departures;
- We have used a peak hour capacity figure of **85 aircraft movements per hour** in our planning;
- With more space between the runways in this option, we can build a new terminal between the runways.

Option 2 is illustrated in Plan 2A at the back of this document, which shows the two runway airport as it would need to be when operating in 2050.

Plan 2B at the back of this document shows the single runway airport for comparison purposes, the proposed boundary for Option 2, and the Safeguarded Area boundary.

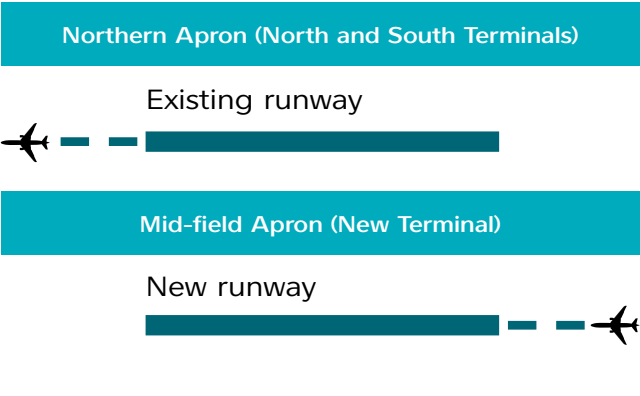
With Option 2 we will be able to alternate how aircraft operate, so that the arrival and departure runways could switch at pre-planned times (see Figure 2). This runway alternation would provide respite to communities that experience air noise from aircraft flying overhead.

At times we would need to operate arrivals and departures from both runways, for example to deal with peaks in demand, or to recover from disruption after bad weather. Allowing departures or arrivals from both runways would speed up recovery from delays.

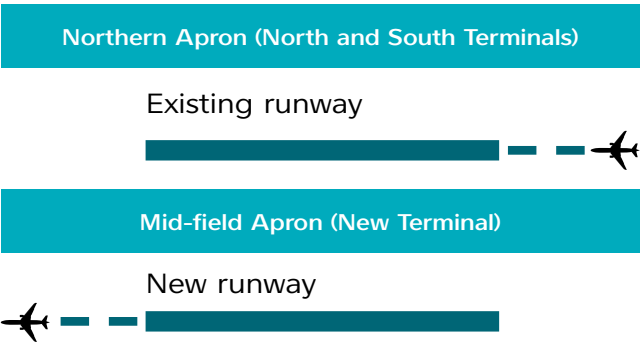
Aircraft taxiing between the new runway and the northern apron would cross the existing runway. At peak times the number of aircraft using the existing runway may need to be reduced by approximately five aircraft per hour to allow these crossings.

FIGURE 2: OPTION 2 - WESTERLY OPERATIONS WITH ALTERNATION

### One half of the day



### Other half of the day



### Traffic forecasts

We forecast that passenger throughput for Option 2 could be up to 85 mppa by 2050. We have adopted a figure for planning capacity in 2050 of 82 mppa.

Using the peak hour aircraft movement rate of 85 movements per hour we estimate that the movement and passenger throughput of Option 2 would grow as shown in Table 2 below.

Table 2 Option 2 Planning Capacity	2030	2040	2050
Annual Movements	372,000	446,000	483,000
Annual Passengers	59 mppa	74 mppa	82 mppa



# Section 2: Our runway options

## 2.2 Option descriptions

### Runway separation

The runway separation needed for Option 2 is 1,045m. This is greater than the minimum distance of 760m needed for independent segregated mode operations.

The separation of 1,045m allows space for a new terminal between the runways which we believe is essential to provide sufficient passenger capacity. We believe that this layout provides a highly efficient configuration that would enable high airfield performance and service levels, simplify taxiing and minimise runway crossings.

With a new terminal in the mid-field area, we do not need to expand the capacity of the North or South Terminals. Option 2 therefore has fewer aircraft using the northern apron than Option 1.

We considered an even wider runway separation for Option 2, to provide more space for a new terminal and piers in the mid-field. We found that this offered some operational benefits by enabling more of the total terminal capacity to be between the runways. However, assessment of the benefits relative to the impacts, particularly on the northern part of Crawley, showed that a wider separation was significantly less sustainable overall than the 1,045m separation we have adopted. We have therefore not pursued wider runway separations.

### Airport land take

Option 2 requires 573ha of land additional to the existing airport, for all new infrastructure including necessary road and river diversions.

The proposed boundary for Option 2 is shown in Plan 2B at the back of this document and reflects our current estimate of additional land needed for the new infrastructure associated with Option 2. Plan 2B shows Option 2 in the context of the safeguarded area boundary.

The proposed boundary for Option 2 falls outside the safeguarded area boundary at some locations, as it includes a land allowance for the River Mole diversion to the west of the airport, and a land allowance for the A23 diversion to the south of the airport, which would be outside the airport operational boundary once built.

### Terminal and apron capacity

For Option 2, all the additional terminal and apron capacity needed to support the expanded airport would be provided between the runways.

Our planning has assumed 42mppa could be maintained in the northern apron (North and South Terminals). So, assuming a planning capacity of 82mppa in 2050, a new terminal would need to handle 40mppa.

Our studies show that an apron and matching terminal and pier system of 40mppa could be built in the space between the runways. The terminal would be located at the eastern end of the site, close to the railway line.

A pier extending from the terminal would provide access to stands, and could be configured specifically for short-haul traffic. Passengers would be able to walk between the terminal and the boarding gates on this pier. A further remote pier would be built further to the west which would accommodate short-haul and long-haul aircraft types. Stands would be able to switch between aircraft types during the course of the day, providing flexibility and high levels of utilisation. The remote pier would be connected to the new terminal by an underground Automated People Mover.

Each pier would have a capacity of approximately 20mppa. The directly connected pier would be constructed first and the remote pier would be built later, to meet traffic growth.

# Section 2: Our runway options

## 2.2 Option descriptions

At 40mppa, the new terminal would have double the capacity of either of the existing terminals. However it would not necessarily need to be double the size. New technologies and processes, for example in security and bag-drop, are changing the way terminals work and reducing the space needed. These changes would be 'designed-in' to the new terminal, making it highly space-efficient. We are also exploring opportunities for decentralising facilities, for example by locating a separate departures lounge in the new terminal's remote pier, rather than having one large lounge to serve all passengers in the main terminal building.

### Ancillary support facilities

Unlike Option 1, there is no need to remove the existing cargo facility, so the overall additional land take for cargo is lower for Option 2 than for Option 1. We have allowed for 64,600m<sup>2</sup> of new cargo facilities (resulting in a total of 91,700m<sup>2</sup>) on the site of the existing North Terminal long-stay car park, which would be relocated to the land east of the railway.

While the existing British Airways maintenance hangar located south of the existing runway would need to be relocated to build the new runway, there is no need to remove the Virgin Atlantic hangar in Option 2. We have allowed for four new hangars on the western boundary of the northern apron to replace the British Airways hangar and to provide the additional capacity needed to support the growth of the airport.

### On-airport surface access infrastructure

For Option 2 the main features for surface access are as follows:

We would improve capacity at the North Terminal landside area but not extend it. We would give priority to buses, coaches and authorised vehicles like taxis. We would develop the South Terminal landside area into the Gatwick Gateway with better bus and coach access.

The new terminal between the runways would have direct road access from the M23 Junction 9 and from the A23. A new bridge over the railway would be built to carry this road.

We would make road access to the South Terminal more direct from the M23 and new road links and junctions would improve access to the A23, which would be diverted further east.

We would build three additional short stay car parks at the new terminal adding 3,000 spaces.

We would add 25,900 long stay parking spaces on-airport, all located close to the M23 Junction 9 to allow easier access. Staff car parking would rise by 1,700 spaces.

We would build a new junction to link traffic from the North Terminal to the A23, which would be separate from the airport access.

The shuttle (automated people mover) between the North Terminal and South Terminal would be extended and continue to the new terminal. It would have extra capacity to serve more passengers, with longer trains, and it would run more frequently.

New walking and cycling routes for staff would be provided between the new terminal and the South Terminal and from the A23 (near Gatwick Road).

The A23 would still have a junction with Gatwick Road. At this junction there will be restricted access to the new terminal for emergency and operational vehicles and some buses. This provides resilience in the case of an incident elsewhere.

# Section 2: Our runway options

## 2.2 Option descriptions

### Option 3:

#### Southern wide spaced parallel runway Independent mixed mode

- In Option 3, the new runway is positioned at a sufficient distance from the existing runway to enable the **independent** operation of the runways;
- The method of runway operation for Option 3 would be **mixed mode**, meaning that both runways are used for arrivals and departures;
- We have used a peak hour capacity figure of **95 aircraft movements per hour** in our planning;
- As with Option 2, the wider spaced runways in this option allow us to provide passenger terminal capacity between the runways. By 2050 over half the overall terminal capacity would be provided in this location.

Option 3 is illustrated in Plan 3A at the back of this document, which shows the two runway airport as it would need to be when operating in 2050.

Plan 3B at the back of this document shows the single runway airport for comparison purposes, the proposed boundary for Option 3, and the Safeguarded Area boundary.

### Operation of the runways

As shown in Figure 3 below, with two-runway independent mixed mode operation there would be approach and departure routes to and from both runways. This is a higher capacity solution than Options 1 and 2.

In the early years of operation, when the aircraft movement rates would be lower, our strategy would be to allocate as much of the northern apron traffic as possible to the existing runway (as today) and allocate traffic from the new terminal in the mid-field to the new runway. This would reduce the number of aircraft needing to cross the existing runway.

FIGURE 3: OPTION 3 OPERATING PATTERN



In later years when runway use increases, it may be necessary to allocate the departures runway according to the departure route being flown by that flight. If the flight is heading south it would be allocated to the southern (new) runway and if it is heading north it would be allocated to the northern (existing) runway. This would avoid the flight paths of departing aircraft crossing and the loss of capacity that would result from this.

Where possible, arriving flights would still be allocated to the runway best suited to their apron location.

At the highest levels of capacity use, runway crossings would be needed for departing flights and arriving flights, taxiing between the northern apron and the new runway. There may be a small loss of runway capacity at peak times.

### Traffic forecasts

We forecast that passenger throughput for Option 3 could be up to 90 mppa by 2050. We have adopted a figure for planning capacity in 2050 of 87 mppa.

Using the peak hour movement rate of 95 aircraft movements per hour we estimate that the movement and passenger throughput of Option 3 would grow as shown in Table 3.

# Section 2: Our runway options

## 2.2 Option descriptions

Table 3 Option 3 Planning Capacity	2030	2040	2050
Annual Movements	377,000	468,000	513,000
Annual Passengers	60 mppa	78 mppa	87 mppa

### Runway separation

The runway separation needed for Option 3 is 1,045m, for the same reasons described in Option 2.

### Airport land take

Option 3 requires 577ha of land additional to the existing airport, for all new infrastructure including necessary road and river diversions.

The proposed boundary for Option 3 is shown in Plan 3B at the back of this document and would be similar to that for Option 2. Plan 3B also shows Option 3 in the context of the safeguarded area boundary.

As with Option 2 the proposed boundary falls outside the safeguarded area boundary at some locations. Again this is due to the land allowance for the River Mole diversion to the west of the airport, and a land allowance for the A23 diversion to the south of the airport, which would be outside the airport operational boundary once built.

### Terminal and apron capacity

As with Option 2, all additional terminal and apron capacity would be provided between the runways with the North and South Terminals remaining at their present capacity.

The only difference from Option 2 is that Option 3 has an additional 5 mppa throughput by 2050. This means that, with around 42mppa capacity in the existing North and South Terminals, the new terminal in the mid-field would need to have a capacity of 45mppa by 2050.

Our studies have shown that an apron and matching terminal and pier system of 45mppa can be provided between the runways.

The directly connected pier would have a capacity of approximately 20mppa. The remote pier would have a capacity of 25mppa. As with Option 2 the directly connected pier would be constructed first and the remote pier would be built later, as required by traffic growth. The piers would be configured as described in Option 2.

With a design throughput of 45mppa, the new terminal would have more than double the capacity of either of the existing terminals. However, as with Option 2, we would use the opportunities arising from new processing technologies to make the new terminal as space-efficient as possible.

### Ancillary support facilities

As with Option 2, there is no need to remove the existing cargo facilities. We have allowed for 65,400m<sup>2</sup> of new cargo facilities (resulting in a total of 92,500m<sup>2</sup>). Arrangements for maintenance facilities are the same as Option 2, with four new hangars on the western boundary of the northern apron to replace the British Airways hangar and provide the additional capacity needed, but no need to remove the existing Virgin Atlantic hangar.

### On-airport surface access infrastructure

For Option 3, the features of the surface access infrastructure are the same as Option 2, with the following exceptions:

We would build a total of four short stay car parks at the new terminal (compared with three in Option 2) adding approximately 3,500 spaces.

We would add 30,900 long stay parking spaces on-airport (compared with 25,900 in Option 2), all located close to the M23 Junction 9 to allow easier access. Staff car parking would rise by 2,100 spaces compared with 1,700 spaces in Option 2.



# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy



This section summarises our Second Runway Airport Surface Access Strategy.

### GLOSSARY OF TERMS

**This section uses some technical terms, which are explained here:**

**“Airport Surface Access Strategy”** is a plan required by Government for all airports that transport over 5 million passengers per year. The strategy sets out the objectives, targets and plans we have in place, and intend to implement, to ensure our passengers and staff can travel safely and efficiently to and from the airport using a variety of modes suited to their needs. It is developed with our Transport Forum Steering Group in consultation with stakeholders and takes into account the needs of our local communities. Our current strategy was published in October 2012 and covers the requirements of a single runway airport up to 2030. We would replace this with a new strategy to support the masterplan for a second runway.

**“Background growth”** is the growth in road traffic and public transport passenger numbers that is expected to occur without consideration of a second runway at Gatwick.

**“Coast to Capital LEP”** is a local enterprise partnership with a focus on supporting economic growth in an area spanning from Croydon to the south coast.

**“Committed improvements”** are improvement schemes for road or rail infrastructure where funding by others has been approved and announced publicly. Committed improvements which relate to Gatwick will take place with or without a second runway development.

**“Connectivity”** is a measure of the range and quality of transport connections to or from a given location.

**“Controlled motorway”** is a section of motorway with three or more lanes and uses variable speed limits to help improve the flow of traffic.

**“Crossrail 2”** is a potential major new underground rail line for London and the South-East promoted by Transport for London and Network Rail as a long-term project needed to relieve crowding on London Underground and support London’s growth.

# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

**“Fastway”** is a group of high quality fast bus services operating along sections of guided busway and dedicated bus lanes to offer a comfortable, reliable and efficient alternative to travel by car.

**“Free flow crossing”** is a project to be completed in 2014 to remove toll booths from the M25 Dartford Crossing, speeding up journey times and reducing congestion.

**“GATCOM”** is a statutory advisory body constituted by Gatwick in accordance with the Civil Aviation Act 1982 (as amended by the Airports Act 1986) to represent local business, community, environmental and passenger groups.

**“Gatwick Area Transport Forum”** was created in 1998 as a partnership of local authorities, government bodies, transport operators, airport companies and local business representatives to guide the improvement in surface access for Gatwick.

**“Gatwick Passenger Advisory Group”** is a sub-group of GATCOM which monitors and advises on passenger related aspects of the airport and makes recommendations for their improvement.

**“Gatwick Transport Forum Steering Group”** acts as an executive board to the Gatwick Area Transport Forum to agree targets for surface access and devise the strategy for meeting these targets.

**“Highways Agency”** is the authority responsible for the construction and maintenance of motorways and major trunk roads in England.

**“High Speed 2 (also HS2)”** is a major rail infrastructure scheme which will connect the major cities of the Midlands and the North of England to London and the extensive, Europe-wide European high speed rail network.

**“Logistics”** is the process of managing the flow of goods between origin and destination.

**“Metrobus”** is a local bus operator with routes in south and south-east London, parts of Surrey, Kent, West and East Sussex.

**“Mode”** is a word used to describe a means of transport (for example bus, rail, car and walking are all modes)

**“Mode share”** is used to describe the proportion of people who use a particular mode as their main means of travel.

**“Network Rail”** is the authority responsible for maintaining and developing the United Kingdom’s railway infrastructure, including tracks and stations.

**“Passenger Transport Levy”** is the financial contribution that Gatwick makes to fund local public transport schemes, committed through an agreement with our local authority partners.

**“Planned improvements”** are improvement schemes for road or rail infrastructure which have not yet had funding confirmed.

**“Public transport”** means rail, bus, coach, underground and tram services.

**“Surface access”** is the term we use to describe all the road, rail and other transport links to an airport.

**“Smart motorway”** is a section of controlled motorway whereby the hard shoulder is made available for use either at busy times or permanently and variable speed limits are used to help improve the flow of traffic.

**“Stakeholders”** are people and organisations with a responsibility for or an interest in developing our surface access strategy.

**“Strategic highway network”** means the network of motorways and major trunk roads in England, which is managed by the Highways Agency.

# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

**“Sustainable modes”** are means of travel which improve the physical well-being of users or result in a positive environmental impact compared with single occupancy travel in a vehicle powered by a petrol or diesel engine.

**“Sustrans”** works with communities, policy-makers and partner organisations to support cycling and creation of healthier, cleaner and cheaper transport.

**“Thameslink Programme”** is a committed £6.5bn rail project currently under construction and scheduled for completion

in 2018, which will improve services and provide new trains and connections crossing London from north to south (focused on the route between London Bridge and St Pancras).

**“Transport for London (TfL)”** is the local government body responsible for managing and developing most aspects of the transport system in the London area.

**“Transport interchange”** is used to describe a location where passengers can switch from one mode of transport to another.

# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

### INTRODUCTION

Gatwick already has very good surface access connections. For a second runway, we would build on the current Airport Surface Access Strategy, make best use of existing road and rail links, support committed improvements, and provide new infrastructure where needed.

We have set ourselves demanding targets for public transport use and believe these are realistic and achievable. By 2040, we aim for 60% of passengers to travel to or from the airport by public transport and for 50% of staff to travel to work by sustainable modes.

Our strategy would help to bring forward committed and planned improvements and make them better value for money. It would provide enough capacity for airport and regional growth and create regional benefits.

We have developed our strategy through engagement with key stakeholders including our Local Authorities, Network Rail, Highways Agency, Transport for London, public transport operators and advisory bodies, Sustrans, Coast to Capital LEP, Gatwick Transport Forum and Gatwick's Passenger Advisory Group. This recognises the wide variety of organisations that are responsible for, or have an interest in, surface access to airports. Working together is essential and we listen closely to the views of our partners and stakeholders. Our Gatwick Transport Forum Steering Group will challenge us to meet our surface access goals.

Our Second Runway Airport Surface Access Strategy objectives were developed with our stakeholders and focus on connectivity, best value and sustainable development to support economic growth and access to jobs. Our strategy puts the passenger experience first and reflects Gatwick as both a destination and a key transport interchange.

Many of the improvements set out in this section will take place with or without a second runway. Improvements that are already planned and committed will help to support the additional infrastructure that would be needed if a second runway development progresses.



# Section 2: Our runway options

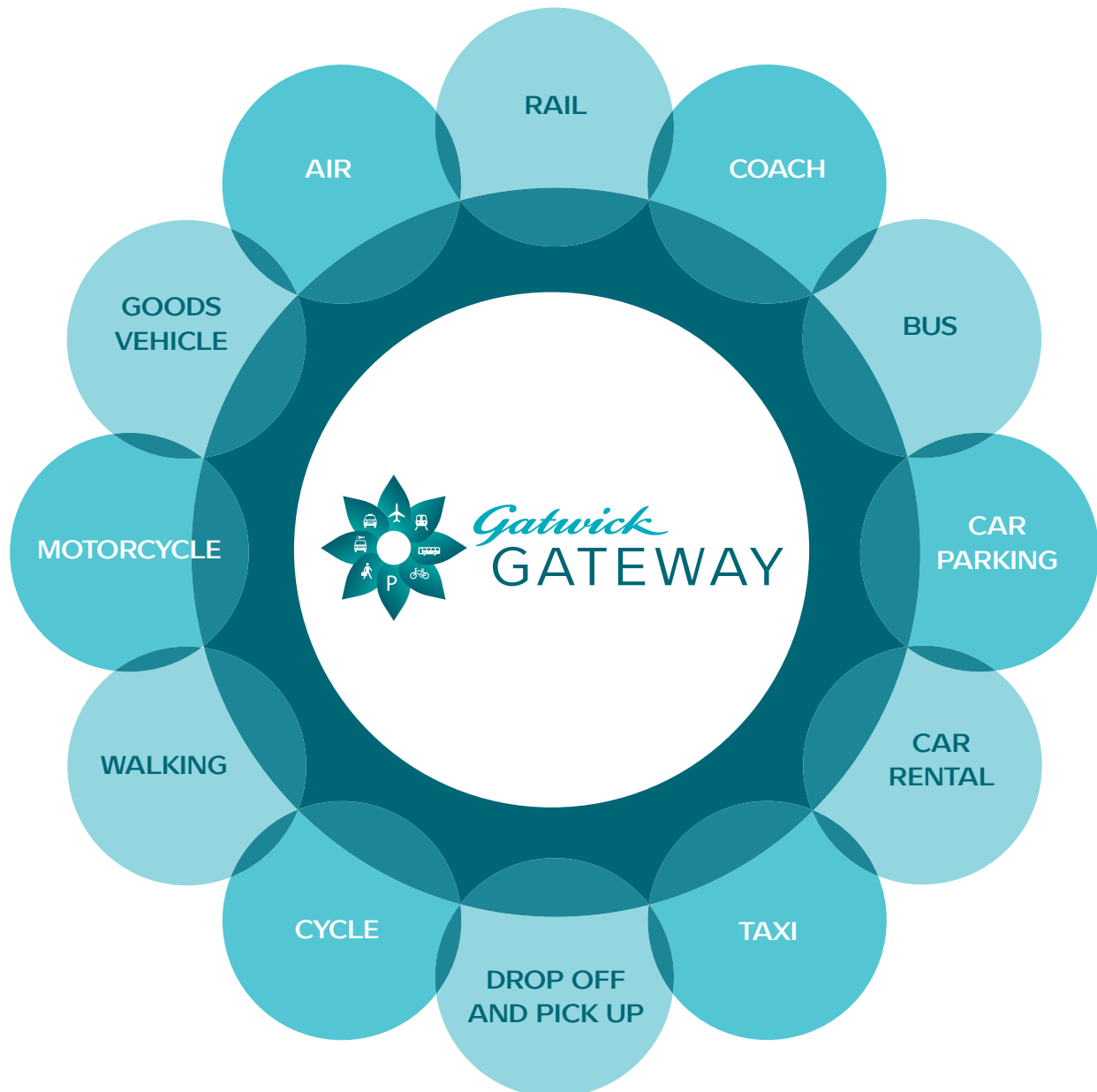
## 2.3 Proposed Airport Surface Access Strategy

### THE GATWICK GATEWAY

We have a clear vision for a new transport interchange at Gatwick to serve the airport and the local community – the Gatwick Gateway.

**The Gatwick Gateway** will be focussed around the airport's main surface transport facilities. It includes the rail and road network, and supports bus, coach, car, taxi, goods vehicle, cycle and pedestrian movements.

**FIGURE 4:** THE GATWICK GATEWAY VISION



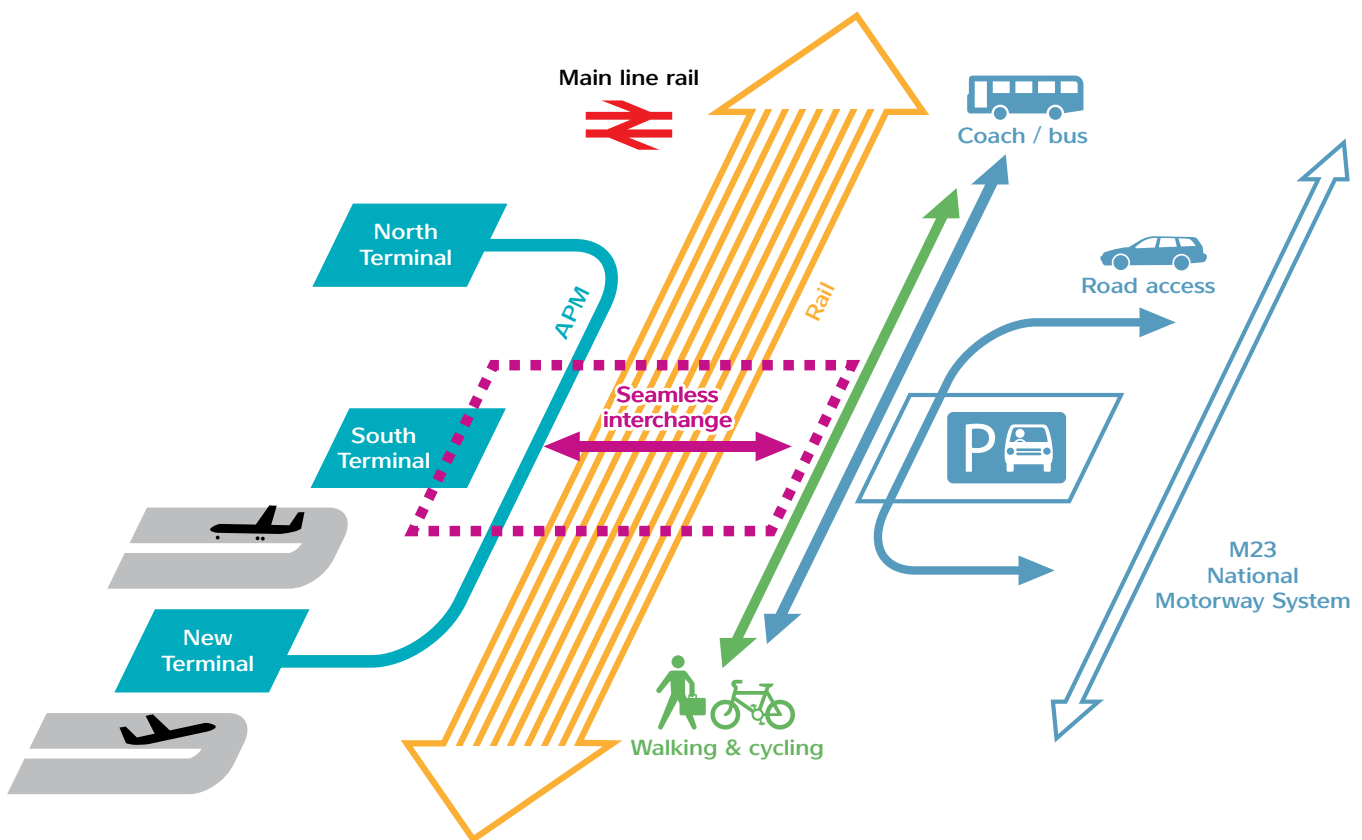
# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

In December 2013 the Government announced a £50m contribution to help develop the railway station concourse, which would be a key element of the first phase of the Gatwick Gateway. This first phase work is not dependent on the second runway development and should be complete by 2020. Our railway station is by far the busiest airport rail station in the UK and concourse capacity and better access to platforms would be needed to improve levels of service and support growth. More people would be travelling through the station with a second runway and we would ensure that the new concourse has the space we need for growth.

The Gatwick Gateway is a priority for Gatwick. For the second runway development, we would go beyond the station improvement and create a new integrated transport facility, creating a high quality interchange around the station, accessible for all. The Gatwick Gateway would be designed around passengers. It would make connections between modes of transport easier and create new journey opportunities. It would bring airport quality passenger facilities to an interchange available to the whole region. We would integrate bus and coach services, walking and cycling routes, and improve access to the airport and the railway station.

**FIGURE 5: THE GATWICK GATEWAY – SEAMLESS INTERCHANGE**



# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

### CONNECTED – RAIL

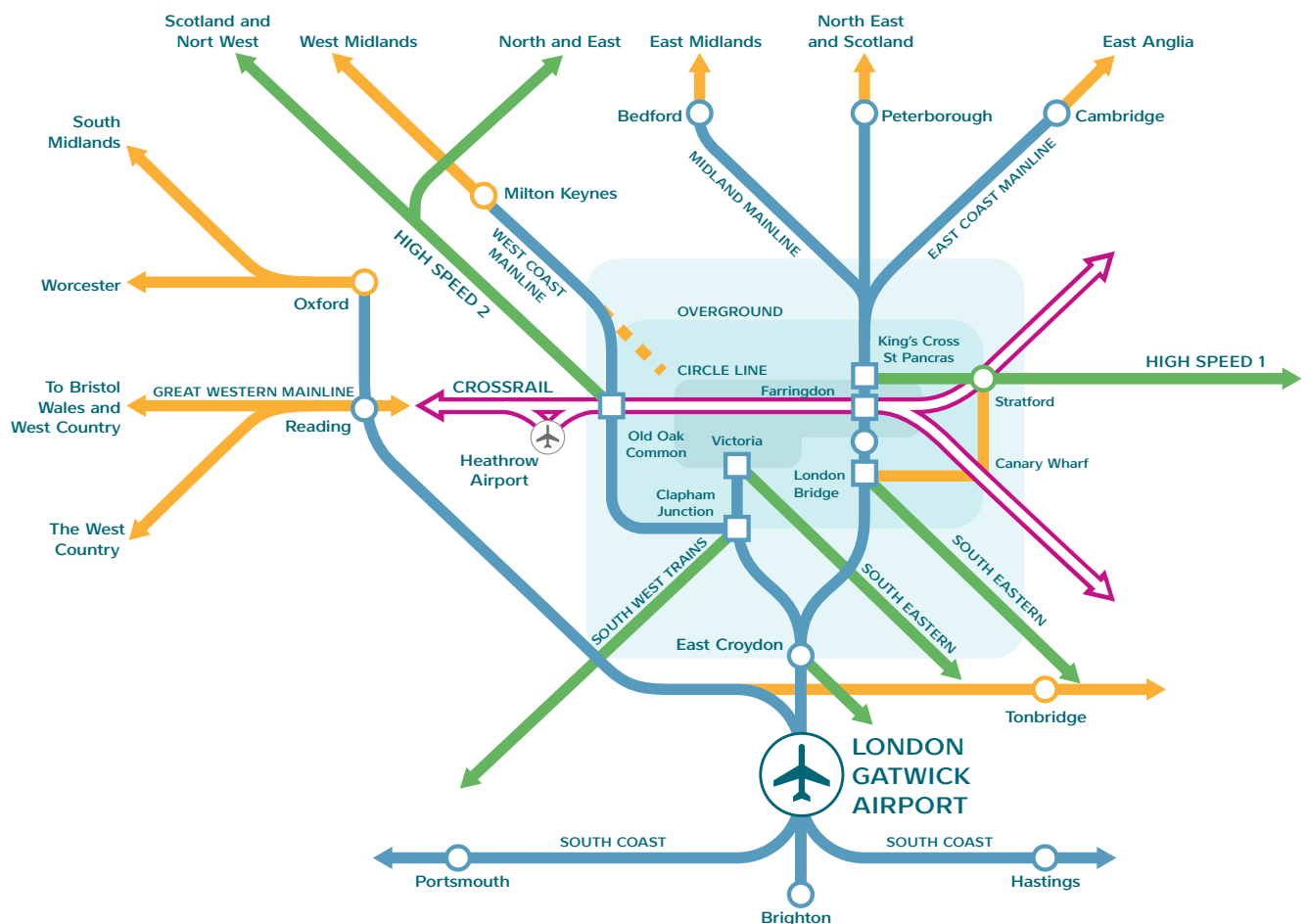
Gatwick is already London's best connected airport by rail. It currently has direct services to 129 rail stations, trains calling 24 hours a day, seven days a week and up to 15 trains an hour to a range of London destinations. Over 37% of air passengers use rail (over 13 million passengers each year) of which about half use the Gatwick Express. There are also more than one million non-airport rail passengers from our local community using the station.

All rail users will benefit from committed and planned capacity improvements for the Brighton Main Line, delivered by Government and Network Rail before 2025. These improvements, which are not dependent on a second runway, include more frequent and

longer trains, with 60% more carriages on peak services into London Bridge, double the number of direct trains between Brighton and London Bridge and 50% more trains to St Pancras and beyond. There will also be more direct connections to Gatwick including new destinations north of London.

These committed schemes will relieve peak crowding and give wider travel options throughout the day. Gatwick contributes only a small amount of total peak demand into London; less than 4% today and less than 5% with a second runway in 2040. Because the airport is busy throughout the day, passengers help fill trains in both directions off peak and in the opposite direction to commuters in the peaks. Rail passenger demand to and from Gatwick helps the rail industry to deliver

**FIGURE 6: GATWICK'S RAIL CONNECTIONS IN 2018 (DIRECT AND VIA ONE CHANGE)**



# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

improvements that are value for money. Our studies show that increases in both commuter and air passenger rail trips up to 2040 can be accommodated with better performance and less crowded peak hour trains than today.

These schemes would help us to increase our public transport mode share to 60%, but we would support Network Rail and Government to go further to deliver long term capacity for beyond 2040. This would be part of plans for future spending between 2025 and 2040.

Once the committed Thameslink Programme, which is not dependent on the second runway development, is completed in 2018, Gatwick will have direct services to 175 stations, over 1,000 railway and London Underground stations with just one change, and will be served by a train into London every three minutes on average.

A high quality Gatwick Express is essential for our future growth. The Department for Transport agreed our request to make sure that the new Thameslink franchise retains the four trains per hour service, non-stop to London Victoria. There are aspects of the current Gatwick Express service that we would like to improve, such as making the trains themselves more user friendly and accessible, running them for more hours in the day and having all trains (including in the morning and evening peaks) starting or ending at Gatwick. These have been discussed with the companies bidding to be the new operator and we understand that they have proposed a range of possible improvements. We will continue to work with the successful bidder, and with the Department for Transport, to progressively improve Gatwick Express. This will occur whether or not the second runway development is built.

We believe that rail could attract a higher mode share than it does now, to as much as 50%, if all the measures in our strategy are implemented. We could achieve this because the new connections we propose don't

require building any new track and because many improvements are already underway. We are working with our partners to improve our response to incidents so that the station and services are kept open, and on time, more of the time.

### Our Priorities for Rail

- Gatwick Gateway and station improvements (committed and planned);
- Dedicated, non-stop, premium Gatwick Express to London Victoria (committed);
- Thameslink direct services to Gatwick for Cambridge and Peterborough (committed);
- Redhill Station improvement and better services to Guildford, Reading and Oxford (committed and planned);
- More capacity and resilience on the Brighton Main Line (planned);
- Better connections to Kent and the South Coast, with more direct services (planned);
- Milton Keynes service to link Gatwick direct to HS2 at Old Oak Common (proposed);
- Crossrail 2 at Clapham Junction and wider masterplan (proposed);
- Improvements at East Croydon (planned);
- Better passenger experience with new ticketing, fare payment and information.

**Target: to deliver 50% rail mode share for air passengers and 20% rail mode share for airport staff by 2040, making rail the access mode of choice to Gatwick.**



# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

### CONNECTED – BUS AND COACH

We want more passengers and staff to travel by bus and coach as well as rail. On average, over 500 coaches arrive and depart from Gatwick each day along with eight different local bus services calling over 400 times a day, direct to our terminals.

Our Passenger Transport Levy is today used to support services and routes, and helped to fund the successful Fastway network. We work with Metrobus to ensure that areas where most airport employees live are well served, with buses linking the airport with Crawley, Horley, Horsham and East Grinstead. Staff receive discounts on National Express and Metrobus with smart card and mobile ticketing technology on local buses.

We would help fund new services and improve existing ones to serve a second runway development where there is a good business case, enhance the passenger experience and provide better facilities. National Express and Metrobus are already committed to work with us to develop new routes. We would make buses and coaches more attractive and accessible by supporting operators investing in information, smart ticketing and other initiatives. We would support new schemes, via the 'Fastway 2 and 3' concept funded with a contribution from the Passenger Transport Levy.

Bus and coach services would benefit from new facilities at the Gatwick Gateway. The new area for buses and coaches would mean simpler journeys and better connections, with a comfortable, enclosed waiting area on two levels.

#### Our Priorities for Bus and Coach

- New and better coach services to Kent, South and East London and the South Coast;
- 'Fastway 2 or 3' with bus priorities where needed to achieve reliable journey times;
- New bus routes into Surrey;
- Gatwick Gateway facilities for bus and coach services;
- Staff Travel Plan initiatives to get more people to work by bus with services available at all times, supported by the Passenger Transport Levy;
- Better passenger experience with new ticketing, fare payment and information.

**Target: to deliver over 10% bus and coach mode share for air passengers and 20% bus and coach mode share for airport staff by 2040.**

# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

### CONNECTED – ROADS

Gatwick has direct access to the national strategic road network via the A23, M23 and M25. A large area of potential employment and economic growth is within easy reach of Gatwick. Our plans ensure a balance between the needs of the airport and our local communities. The proposed improvements would provide extra resilience in the overall road network.

A bigger airport would increase road traffic on main roads, even with efforts to increase public transport use and other measures to minimise car traffic. However, growth in non-airport background traffic would be greater than the traffic generated by a second runway so our improvements make sure all users benefit.

More than three quarters of our traffic uses the M23 to travel to or from the airport so does not use the local roads. At the M25, airport traffic accounts for less than 10% of total traffic at peak times. On local roads (excluding both the M23 and A23 south of Crawley) beyond 3km from the airport boundary, less than 15% of all traffic is associated with Gatwick.

The Highways Agency is leading a study for the M23 and M25 to develop solutions to manage traffic growth. Extra capacity will reduce congestion and improve accessibility before 2025, with or without a second runway including:

- M25 Dartford Free Flow crossing, eliminating toll booth queues (2014 completion);
- M25 Smart Motorway between junctions 5-7, to increase capacity (2014 completion);
- M25 controlled motorway between junctions 7-8, to improve traffic flow (2019 completion);
- M23 Smart Motorway between junctions 8-10, to increase capacity (2021 completion);

- A23 Handcross to Warninglid carriageway widening, to improve safety (2014 completion).

We want to see further improvements to the roads directly around Gatwick, to increase capacity for all journeys and allow local traffic to flow efficiently. We have tested our proposals, and analysis shows shorter journey times for all traffic in 2040 with our road improvements for a second runway, compared with the existing network and no second runway at Gatwick in 2025.

Improvements focus on providing safe, reliable journeys and predictable journey times, and add local improvements to the committed investment in the strategic highway network. The improvements we are proposing, which would proceed with a second runway development, are summarised in the following paragraphs.

### M23 Access to Gatwick

We would improve Junction 9 of the M23 to nearly double its capacity. This means adding a new free flowing slip road over the existing roundabout to allow for better access between the M23 and the A23 south towards Crawley. It would also increase capacity for airport access and provide for separate routes to the North Terminal (and Horley) and South Terminal (and Crawley), which would benefit both Gatwick and other traffic.

The combination of committed M23 and M25 improvements and proposed local road changes give enough capacity to cope with background growth and airport traffic from a new runway and provides wider benefits by improving access to Horley and Crawley.

### Local roads and access to Gatwick

The second runway development would require local road improvements. These would balance capacity for airport access with connectivity for local communities.

# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

**A23 diversion** – Part of the new runway would lie over the current A23. Diversion of the A23 would improve access for local traffic, by separating it from airport traffic. The preferred route for the A23 would be to move it east of the railway to go around the new operational area of the airport. It would return to the current alignment close to the junction with Fleming Way.

The detailed route depends on the runway option and is shown on Plans 1A, 2A and 3A at the back of this document. Some existing junctions would be re-provided, to ensure access remains for Manor Royal, but the emphasis would be on having fewer junctions and reliable journey times with better links between the A23 and M23.

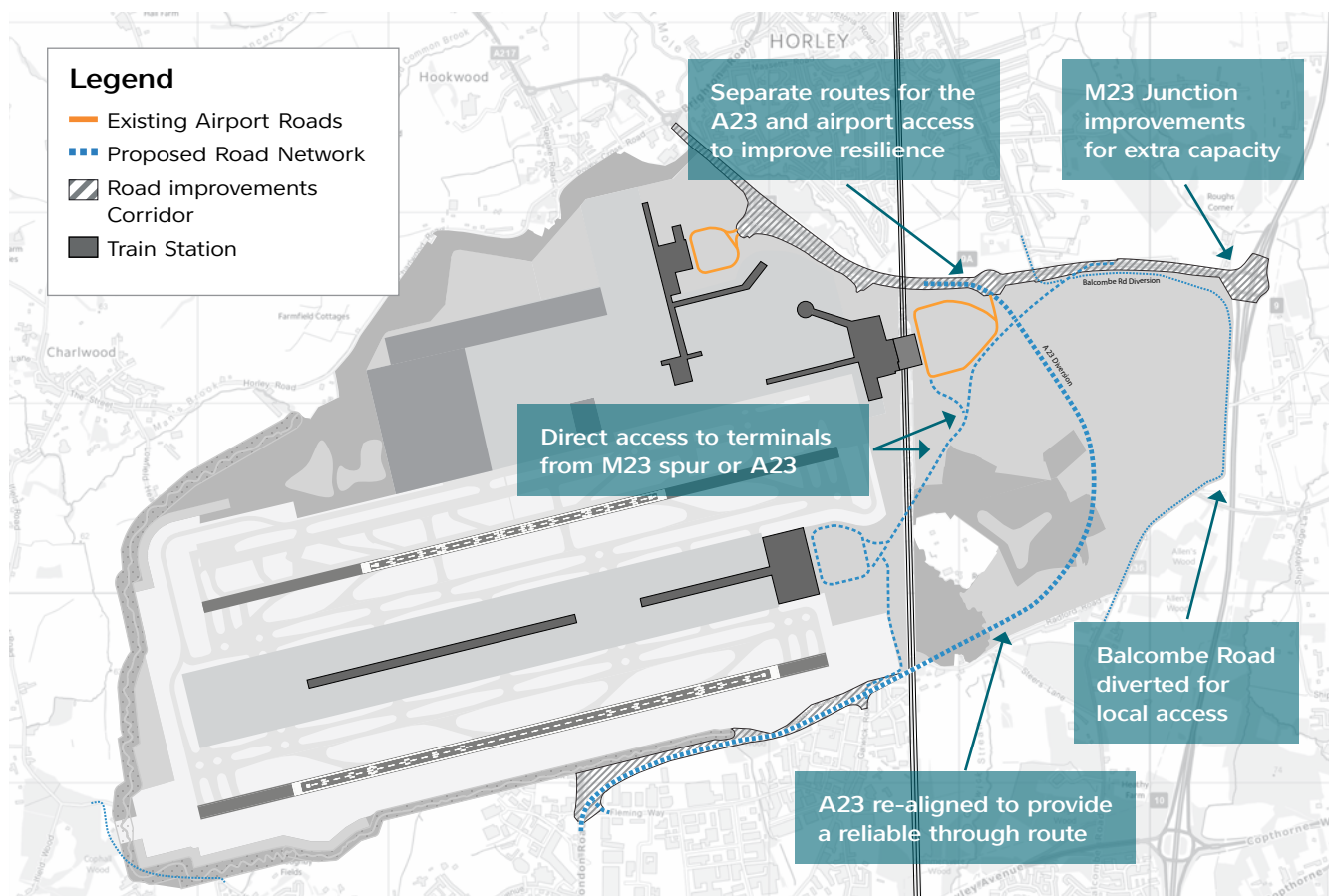
**Balcombe Road diversion** – We would also divert Balcombe Road, between Radford

Road and the M23 spur road. It would still connect to Antlands Lane but we propose it stays a local road, wide enough for cyclists to use safely but not attracting traffic from the A23 and A264.

**Lowfield Heath Road/Charlwood Road** – This route would be lost with the new southern and western airport boundary and there would be no access onto Bonnetts Lane from Lowfield Heath Road. Traffic would use Ifield Road or the A23 instead. We believe this would mean there would be no increase in airport traffic through Charlwood as a result of development.

**Ifield Road diversion** – A short diversion of Ifield Road would be needed, close to where it crosses the River Mole. The proposed diversion of the River Mole around the southwest corner of the airport would run parallel to the change in alignment of Ifield Road.

**FIGURE 7: ROADS STRATEGY**



# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

### LOCAL HIGHWAY DEVELOPMENT FUND

We commit to supporting further road improvements through the introduction of a Local Highway Development Fund with a second runway. Local authorities would use the fund to help improve the local road network where Gatwick is one of a number of contributors to traffic. We will work with our local authorities to agree how it should be set up and run, where and how much to spend on individual schemes.

With the public transport improvements in our strategy, our plans to reduce car use could bring down the share of air passenger trips by private car by 15% by 2040. There would be some increase in traffic but only on the main roads, where extra capacity would be provided as a result of planned and committed projects.

### CONNECTED – CAR PARKING

Forecast demand for long stay car parking requires between 16,800 and 30,900 more spaces depending on the runway option selected. Long stay car parking would be moved to an area close to the M23, with easier access and shorter connection times to terminals. Staff parking would also be relocated with between 900 and 2,100 additional spaces for the extra workforce at the airport. We would keep all new car parking spaces on the airport.

For those who do need to park at the airport, the experience would be efficient, reliable and straightforward. Our Staff Travel Plan has an objective to reduce the number of parking spaces for driver-only journeys to work. Our Travel Plan initiatives already support car sharing or the use of electric or low emission vehicles if staff need to travel by car.

### Our Priorities for Roads

- Deliver better access and benefit the local communities;
- More capacity at M23 Junction 9 and better links to the A23;
- Separate junctions for the airport terminals off the A23;
- Ensure safe, reliable and easy to follow routes;
- Divert the A23 to the east of the airport;
- Close Lowfield Heath Road and prevent an increase in traffic through Charlwood;
- Divert Balcombe Road as a local road with connection to Antlands Lane;
- Maintain local connections by changes to southern boundary routes;
- Develop a Local Highway Development Fund.

**Target: to deliver a 15% reduction in mode share for air passenger private car journeys and 10% mode share reduction in single occupancy car journeys by staff by 2040.**



# Section 2: Our runway options

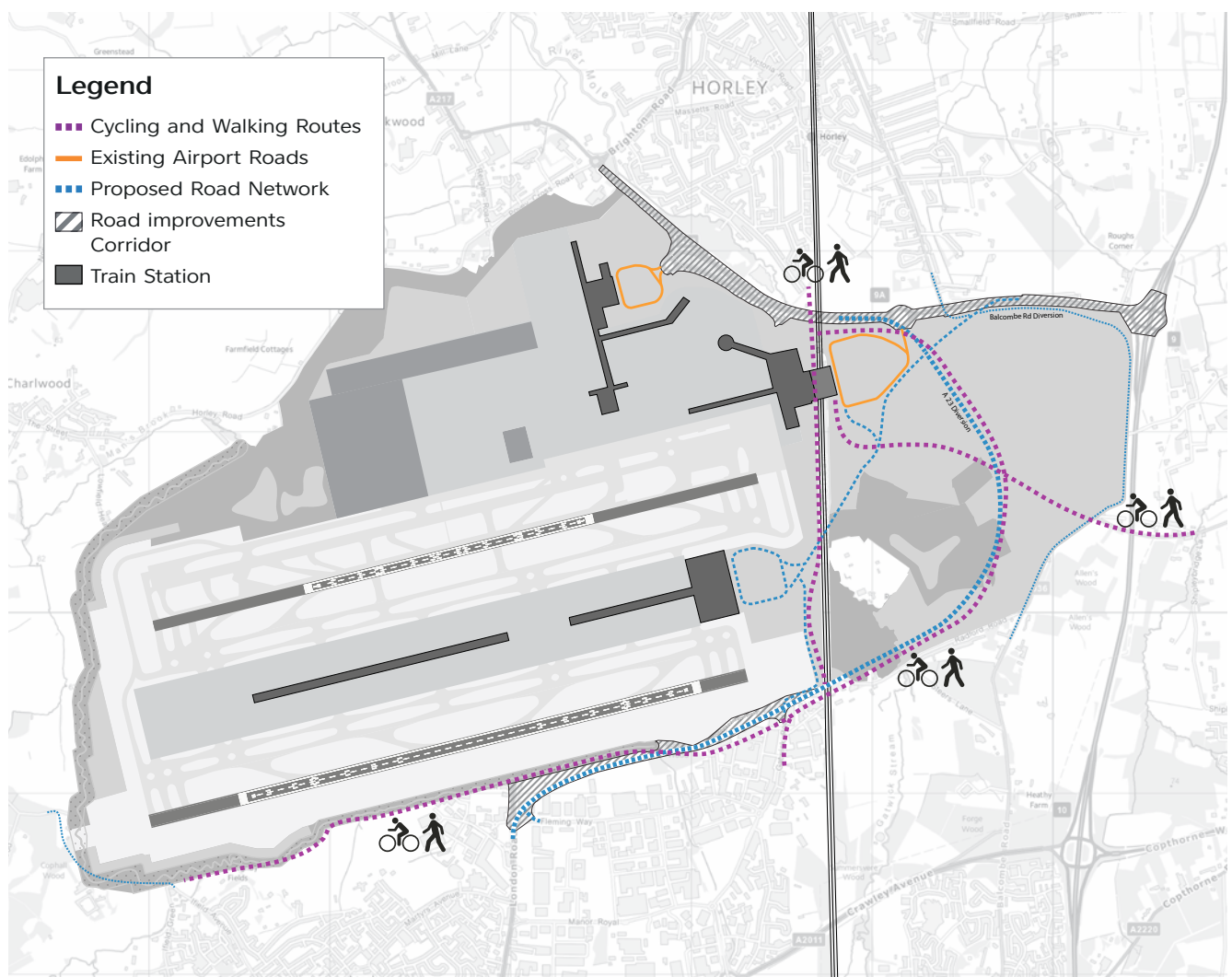
## 2.3 Proposed Airport Surface Access Strategy

### CONNECTED – CYCLING AND WALKING

We have reviewed all existing cycling facilities and connections to identify areas for improvement. Cycling to work is supported by the Staff Travel Plan and we want to increase the percentage of staff who regularly cycle to work from the 2% it is now. Our cycling strategy for the second runway includes:

- Improve some routes and facilities and provide new ones to connect the airport;
- Replace National Cycle Route 21 with better local access between Horley and Crawley and a segregated cycle route following the diverted A23;
- Provide safe on-road cycling on Balcombe Road and a direct cycle route from Antlands Lane to the Gatwick Gateway;
- Deliver a new cycle parking hub for staff and passengers at the Gatwick Gateway.

**FIGURE 8: CYCLING AND WALKING ROUTES**



# Section 2: Our runway options

## 2.3 Proposed Airport Surface Access Strategy

Our plans would also include an integrated and clearly signposted network of pedestrian routes to replace the disconnected paths that would be lost under the boundary changes. A linear park could be created south of the airport which could include footpaths overlooking the proposed river diversion from Crawter's Brook to the River Mole. The river corridor could link to National Cycle Route 21 and could provide a safe and attractive pedestrian and cycle route parallel to the A23, connecting to Balcombe Road, Antlands Lane and the Gatwick Gateway.

### CONNECTED - CAR RENTAL AND TAXI

Car rental is a convenient alternative for passengers to be flexible with their onward travel. Most car rental users at Gatwick are non-UK visitors and business travellers. We are working closely with the Business Vehicle Rental Leasing Association (BVRLA) to increase the car rental mode share and improve efficiency. Gatwick Gateway would incorporate a consolidated car rental facility, keeping it close to our terminals and improving operations and passenger experience.

Gatwick has an approved on-airport taxi operation run by a local, Horley-based company, demonstrating our support for local businesses. We will continue to have taxis available on the rank at all times, so customers don't have to wait.

### EMPLOYEE TRAVEL

Employee travel is an important part of our surface access strategy. Nearly half of our 21,000 staff from 230 different companies commute less than 10 miles. Our Staff Travel Plan, published in 2013, has new initiatives to support travel by sustainable modes such as public transport and car sharing.

We have invested over £6 million in the Fastway bus network since 2000. There are now 20 more buses each day for staff on early shifts starting between 04:00 and 06:00.

Employees enjoy discounted bus, coach and rail travel. Future rail improvements which are taking place with or without a second runway development, including connections to more stations, will make rail even more attractive for Gatwick commuters. Car sharing has increased by over 60% since 2010. We would also offer incentives for zero or low emission vehicles and would provide electric charging points in priority spaces in staff car parks.

Our target would be for 50% of staff travelling to work by sustainable modes by 2040 with a second runway and we would publish a new staff travel plan to support growth with a second runway. Allowing for growth in airport employment, meeting this target would lead to more than a million fewer car journeys and 20 million less miles travelled per year to and from the airport.

### CARGO AND LOGISTICS

Our logistics strategy focuses on efficiency, reducing carbon and meeting sustainability objectives. Gatwick Direct is our consolidation service for moving goods on the airport. Since its launch, it has reduced costs and the number of van and lorry journeys for 70% of customers around the airport and we would continue plans to expand its operation.

Our plans for the second runway would consolidate all cargo and logistics deliveries in a single location to reduce transport impacts, minimising goods traffic travelling on the local road network in peak periods and giving direct access onto the A23 and M23. We would maximise the use of rail freight, particularly during construction of a second runway.

# Section 2: Our runway options

## 2.4 Environmental and social effects of the options



### GLOSSARY OF TERMS

**This section uses some technical terms which are explained here:**

**“Air noise”** is noise associated with aircraft in flight, taking off or landing.

**“ANCON”** is an aircraft model used by the CAA’s ERCD to establish noise contours.

**“AQMA”** means Air Quality Management Area. An area designated by a Local Authority as being subject to a plan to improve the air quality – called a Local Air Quality Action Plan, to ensure that air quality is within UK and European thresholds.

**“CAA”** is the Civil Aviation Authority, the UK’s aviation regulator.

**“Compensatory habitat”** means new areas of “natural” habitat that legally have to be created before a development leading to loss of an existing habitat takes place.

**“dB(A)”** is a measurement of sound decibels with A-weighting. A-weighting is applied to measured sound levels to account for the relative loudness perceived by the human ear.

**“ERCD”** is the Environmental Research and Consultancy Department of the CAA.

**“Employment Land”** is a term used to describe land with commercial, industrial and related uses.

**“Environment”** is defined as the natural world in a particular geographic area as affected by human activity.

**“Environmental Impact Assessment (EIA)”** a means of drawing together, in a systematic way, an assessment of a project’s likely significant environmental effects. The procedure for carrying out an EIA is defined by European Directive and UK Law, and is a requirement of the process of seeking development consent.



# Section 2: Our runway options

## 2.4 Environmental and social effects of the options

**“Grade I Listed”** means buildings of exceptional interest.

**“Grade II\* Listed”** means particularly important buildings of more than special interest.

**“Grade II Listed”** means buildings which are nationally important and of special interest.

**“Ground noise”** is noise associated with taxiing aircraft and other ground level activities.

**“Heritage”** means something inherited from the past and may relate to buildings or natural features.

**“LAeq”** is a way of measuring air noise, and means ‘equivalent sound level of aircraft noise’, often called ‘equivalent continuous sound level’. It is measured in dB(A). For conventional historical contours this is based on the daily average movements that take place in the 16 hour period (07:00 - 23:00 Local Time) during the 92 day period 16 June to 15 September inclusive.

**“Land take”** is a term used to describe land which we need to acquire in order to build a second runway.

**“Mitigation”** is the action of reducing the seriousness or impact of something.

**“NO<sub>2</sub>”** is Nitrogen Dioxide, a source of air pollution.

**“PM<sub>10</sub> and PM<sub>2.5</sub>”** are small atmospheric particles known as particulate matter, and are sources of air pollution.

**“Noise exposure contour”** or **“Noise contour”** is a graphical depiction of areas exposed to a given noise level.

**“Offset”** a system of providing new habitats to replace habitats lost to development.

**“Special Areas of Conservation (SAC)”** are strictly protected sites designated under the European Union Habitats Directive, and are important high-quality conservation sites that will make a significant contribution to conserving habitats and species.

**“Special Protection Areas (SPA)”** are strictly protected sites classified in accordance with Article 4 of the European Union’s Birds Directive, which came into force in April 1979. They are classified for rare and vulnerable birds and for regularly occurring migratory species.

**“Scheduled monument”** means a nationally important site or monument which has been given legal protection by being placed on a list, or ‘schedule’ by the Secretary of State for Culture, Media and Sport on advice from English Heritage.

**“Socioeconomic impacts”** means the positive and negative effects of development on community social and economic well-being, including employment.

**“Site of Special Scientific Interest (SSSI)”** means sites within the UK that are nationally important for plants, animals or geological or physiographical features and protected by law. This system provides the underpinning statutory protection for all sites, including those which are also of international importance.

# Section 2: Our runway options

## 2.4 Environmental and social effects of the options

In this section we explain the environmental effects of the three options.

We have undertaken environmental analysis of our options, with specialist consultants providing expert advice. Our options were assessed by each consultant for their topic area. We have grouped the analysis into the following categories:

- Land take, land classification and properties affected;
- Community facilities affected;
- Air noise, ground noise and air quality impacts;
- Ecology, water, heritage, landscape and visual impacts.

### Common issues

In Section 2.1, we described our approach to environmental design. We also explained that, in all of the options, the new boundary would be influenced by the necessary river and road diversions.

For all three options, we have aimed to avoid effects on community, nature conservation and heritage features wherever possible, and to minimise effects where they cannot be avoided. We will need to provide compensatory habitat to offset the effects of losses which we cannot directly mitigate and we will work closely with stakeholders during the planning process to make appropriate arrangements for this.

As set out in Section 2.2, the land take requirement for Options 2 and 3 is greater

than for Option 1. This means that Option 1 will nearly always perform better when reviewing environmental effects related to land take. (However the opposite is true when assessing socioeconomic impacts and benefits including employment, where Option 3 tends to perform best).

### Source information

We produced the data in this section using Ordnance Survey mapping and publicly available data and analysis by our consultants. We have also used site visits to view the areas concerned directly. If our runway development is recommended by the Airports Commission, approved by the Government, and if we decide to seek development consent for a second runway, we would undertake a full Environmental Impact Assessment (EIA) which will be based on detailed site surveys.

At this stage, our aim is to understand the significant differences between the options. We recognise that there may be overlaps between effects and also that there may be further indirect effects. Should we seek development consent in the future, an EIA will address these issues.

### Land take, land classification and properties affected

Table 4 below shows the amount of additional land which would be needed.

Options 2 and 3 would need about 180ha more land than Option 1. For Options 2 and 3, the airport boundary would move around 300m further south than for Option 1.

Table 4 Land required for development (ha)	Option 1	Option 2	Option 3
Existing airport area	759	759	759
Additional land required	388	573	577
Total land required for development (existing and additional)	1147	1332	1336



# Section 2: Our runway options

## 2.4 Environmental and social effects of the options

The existing single runway airport occupies an area of 759ha which includes the operational land and also some green spaces around the perimeter which are in Gatwick ownership.

Table 5 below shows the current classification of the land needed for development. All three options would result in the removal of Lowfield Heath industrial estate and City Place. Options 2 and 3 need more land and property to the south of the existing single runway airport which would likely result in the loss of some additional property in the Manor Royal Estate. We have explained in Section 2.1 a potential opportunity to provide replacement land for industrial and commercial use as part of the second runway development.

Table 6 below shows the number of residential and non residential properties which would need to be purchased and removed for development of the options.

### Community facilities

Table 7 below shows the community facilities directly affected. In all options, the Grade II\* listed St. Michael and All Angels Church and its graveyard would be affected, together with one Care Home and an Ambulance Station. Options 2 and 3 encroach on the Willoughby Fields site, which is widely used for sport and recreation by the local community, and is a Local Nature Reserve. We will work with affected people and organisations to plan appropriate mitigation and relocation arrangements.

Table 5 Land use classification* (ha)	Option 1	Option 2	Option 3
Employment Land	14.1	34.9	34.9
Settlement Area**	15.8	40.9	40.9
Agricultural Land	243.2	357	359.5
Green Belt Land	4.7	4.7	4.7

\*The numbers in this table do not sum to produce a total due to overlaps in land designations

\*\*Area derived from Local Plan settlement limits

Table 6 Properties removed	Option 1	Option 2	Option 3
Number of Residential Properties	136	166	166
Number of Non Residential Properties	235	286	286

Table 7 Community facilities directly affected	Option 1	Option 2	Option 3
Church	1	1	1
Ambulance Station	1	1	1
Nursery/pre school	3	4	4
Care Home	1	1	1
Playing Fields (ha)	0	4.9	4.9

# Section 2: Our runway options

## 2.4 Environmental and social effects of the options

### Air and ground noise

Aircraft today are much quieter than they were in the past and will be replaced by even quieter aircraft in the future. However, our second runway development could see the number of planes landing or taking off at Gatwick double by 2050 compared to the present level. We are committed to working with the Government, airlines and Air Traffic Control (ATC) to do everything we can to reduce noise levels and to mitigate noise impacts.

At Gatwick, the main nearby population centres (Crawley to the south and Horley to the north) are generally free from aircraft over-flight, however communities to the east and west are over-flown. Whilst in terms of total numbers of people affected by noise Gatwick has relatively low population densities, we are very conscious of the concerns about noise that any proposals for runway development will give rise to in those areas which are affected.

Table 8 below shows the predicted size, the number of households and population of the 54dBA LAeq noise contour and the 57dBA LAeq noise contour.

For each of our 2nd runway options we have generated air noise contours using the CAA's approved 'ANCON' noise model. The contour maps are provided as Plans 1C, 2C and 3C at the back of this document.

New flight paths to and from the new runway, and alterations to the existing flight paths to the existing runway, could mean that some people could be newly exposed to air noise from arriving or departing aircraft. Even so we expect that, with a new runway, flight paths would continue to avoid overflying the most densely populated towns and settlements closest to the airport including Crawley, Horley, East Grinstead and Horsham.

Table 8 54dBAeq,16hr noise contours and 57dBAeq,16hr noise contours	Contour area (km <sup>2</sup> )	Population in contour (thousands)	Households in contour (thousands)
54dBAeq,16hr noise contours			
Existing runway at Gatwick (2040)	64.1	7.7	3.1
Option 1 (2040)	85.2	10.2	4.1
Option 2 (2040)	109.0	25.9	10.0
Option 3 (2040)	118.3	31.1	12.0
Option 2 (2050)	113.3	25.2	9.7
Option 3 (2050)	124.1	30.6	11.8
57dBAeq,16hr noise contours			
Existing runway at Gatwick (2040)	35.4	3.1	1.3
Option 1 (2040)	46.6	2.7	1.1
Option 2 (2040)	61.0	10.8	4.1
Option 3 (2040)	64.7	14.4	5.6
Option 2 (2050)	62.4	11.3	4.3
Option 3 (2050)	66.9	14.2	5.5

# Section 2: Our runway options

## 2.4 Environmental and social effects of the options

The Government uses daytime air noise contours, based on the LAeq noise measure, to assess the effects of air noise to people living around airports. Each contour shows the area exposed to noise at a certain level.

- The Government's Aviation Policy Framework supports use of the 57dBA LAeq contour to mark the approximate onset of community annoyance;
- A larger contour (54dBA LAeq) is increasingly used to provide a further indicator at a lower level of noise;

Today, some 3,650 people live within the 57dBALAeq noise contour area. By 2020/21 the number of aircraft movements on the existing runway will have increased and we predict that the population living within the 57dBALAeq will be 4,950.

Option 1 would involve the least absolute change in area, populations and households from full use of the runway in 2040. In effect, with the new runway being used for arrivals and the existing runway being used for departures the arrivals flight path for the new runway would be displaced some 585m to the south of its existing alignment. In 2040, we would expect Option 1 to be operating at near capacity and for there to be relatively little increase in throughput to 2050.

Options 2 & 3 would see a more significant increase in movements to 2050. We would expect this to be offset to some extent by

further improvements in aircraft departure noise performance. The shape of the 2050 noise contours is expected to change so that, although the contours have slightly larger areas, marginally fewer people would actually live within them.

Option 2 would offer the opportunity to provide some respite from noise for people living under flight paths due to the opportunity to swap use of the two runways between handling arriving aircraft and departing aircraft. This has been explained in the description of Option 2 in Section 2.2. This has also been taken into account in the modelling of the contours for Option 2 by assuming that each runway is used 50% of the time for arriving aircraft and 50% of the time for departing aircraft.

This would mean for example that on westerly operations, when the southern runway is used for departures, there would be no aircraft arriving for that period of time on the southern runway and no aircraft departing on the northern runway. So there would be respite from arrivals noise for people living on the approach path to the eastern end of the southern runway and respite from departures noise for those living to the west of the northern runway. The use of the runways would then switch such that respite would then be given to people living on the approach path to the northern runway and the departures routes from the southern runway.

Table 9 Noise Sensitive Buildings	Schools / Nurseries		Hospitals		Places of Worship	
	54dBLAeq	57dBLAeq	54dBLAeq	57dBLAeq	54dBLAeq	57dBLAeq
Existing runway at Gatwick (2040)	10	3	0	0	10	2
Option 1 (2040)	12	3	0	0	10	1
Option 2 (2040)	24	6	1	0	18	2
Option 3 (2040)	31	8	1	0	19	5
Option 2 (2050)	25	8	1	0	18	4
Option 3 (2050)	29	10	1	0	20	7

# Section 2: Our runway options

## 2.4 Environmental and social effects of the options

Option 3 would affect about 6,000 more people and 2,000 additional households than Option 2 in 2040, and we believe this relative difference in performance would remain broadly the same in future years.

Table 9 shows the number of noise sensitive buildings within the predicted the 54dBA LAeq and 57dBA LAeq noise contours.

The table shows that Option 1 would affect the fewest number of noise sensitive buildings whilst Option 3 would have a slightly greater impact on schools and nurseries and places of worship than Option 2.

### Ground noise

We have assessed the ground noise impacts of the three options on nearby communities.

The main conclusions are that Option 1 gives greater ground noise effects to the north of the airport, in places such as Charlwood, Povey Cross and Horley, than Options 2 and 3. This is due to the concentration in Option 1 of activities, including aircraft taxiing, in the existing northern apron areas and because the second runway would be closer to these areas.

By contrast, Options 2 and 3 would lead to greater ground noise effects on communities to the south of the airport, in north Crawley and Ifield, due to the closer proximity of the runway and the noise that would arise from operations taking place in the new midfield terminal area.

Overall, the geographical areas affected by ground noise under all options considered will extend further from the two runway airport (particularly to the south) than they do with the existing single runway airport today. While Options 2 and 3 extend ground noise impacts further into the northernmost residential areas of North Crawley and Ifield, Option 2 provides some opportunities for runway mode alternation and scheduled respite which would not be available under Option 3. Option 1 has a greater effect than Options 2 and 3 on communities to the north.

### Airspace

In late 2010, the Civil Aviation Authority (CAA) published the consultation document 'Future Airspace Strategy for the UK' for the modernisation of UK airspace around the themes of safety, capacity and environmental performance. We responded in detail, welcoming the draft strategy which we see as an important first step to creating a new national airspace plan for the UK.

We continue to work closely with both the CAA and National Air traffic Services (NATS) to ensure that the potential capacity of Gatwick's runway is matched by an equivalent capacity in the local airspace.

We are working in partnership with NATS to replace the existing aircraft approach and departure routes for the single runway airport. Our aim is to increase the sustainability of our operations through reducing negative environmental impacts and the number of people affected by aircraft noise. We ran a three month public consultation seeking the views of all stakeholders around the airport which ran from 15th October 2013 and concluded on 21st January 2014.

Although the consultation has now ended, you can read more information about the airspace modernisation project and read the report when it is published at [www.londonairspaceconsultation.co.uk](http://www.londonairspaceconsultation.co.uk)

Changes to airspace anywhere in the UK require NATS or airport operators to sponsor an Airspace Change Proposal (ACP). NATS would lead on the process of designing the airspace for a future two runway Gatwick.

# Section 2: Our runway options

## 2.4 Environmental and social effects of the options

### Air quality

Existing air quality in the area close to the airport is generally good.

Our current performance, which we commit to maintain, is zero breaches of air quality limits.

Our modelling confirms that development of a second runway at Gatwick would maintain air quality conditions at levels significantly within all national and EU mandatory standards.

We work in partnership with the companies operating at the airport to reduce Gatwick's air quality impacts. We encourage our partners to fly cleaner and quieter aircraft, operate cleaner and more efficient vehicles, and encourage their passengers to use public transport.

We set out in Section 2.3 the targets we are setting ourselves to reduce single occupancy car journeys and further increase public transport use.

An Air Quality Management Area was designated in Horley in 2002 due to a risk that concentrations of nitrogen dioxide (NO<sub>2</sub>) might not meet the Government's annual average objective of 40µg m<sup>-3</sup> (micrograms per cubic metre), on the Horley Gardens Estate. We continually monitor Gatwick's impacts and use the data to inform improvement programmes.

We have investigated whether any of our options would lead to concentrations exceeding the relevant national standards at Horley and in other locations close to the airport. We have concluded that they will not.

We have assessed the effects of each option on local air quality by calculating emissions from on-airport and off-airport sources including road traffic and produced air quality contours for emissions of NO<sub>2</sub> and small atmospheric particles known as particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). These are the main emissions which the airport influences locally and which are subject to national standards. We have taken expert advice about the likely future emissions of aircraft engines and road vehicles and taken into account the heating requirements for terminals and other buildings.

Our assessments show that:

- For all three of our runway options, concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> would be well within the national standards for these emissions at all locations around the airport, including NO<sub>2</sub> concentrations in the Horley Air Quality Management Area;
- The differences between options are relatively small compared with the margin to the limits for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>.

Option 1 performs better overall than Options 2 and 3 because it has lower emissions overall, with emissions for Options 2 and 3 being very similar to each other. Compared with the margin to the legal limits, the difference between options is very small.

Reigate and Banstead Borough Council declared an Air Quality Management Area (AQMA) for NO<sub>2</sub> concentrations in 2012 in the area to the north of the airport perimeter across the A23 in Horley. Pollutant concentrations at the Horley AQMA are currently well below the air quality standard for NO<sub>2</sub>. Table 10 shows the concentrations at these locations in 2012 and those predicted for 2040.

Table 10 Current and predicted NO <sub>2</sub> concentrations (µg/m <sup>3</sup> ) in the Horley AQMA	2012	2040 Option 1	2040 Option 2	2040 Option 3
RG1 Horley	25	27.4	26.4	26.3
RG2 Horley South	31	30.3	29.8	29.1



# Section 2: Our runway options

## 2.4 Environmental and social effects of the options

### Water

All existing rivers are shown on Plan 0A at the back of this document. Routes of proposed river diversion are shown on Plans 1A, 2A and 3A at the back of this document.

The River Mole, Crawter's Brook and Man's Brook flow north through and around the existing single runway airport. They join with the Gatwick Stream at Riverside Gardens Park in Horley.

All options lead to the loss of some areas of land within the two runway airport boundary that currently provide flood storage during extreme rainfall events. We therefore need to provide compensatory flood storage at least equivalent to the volume of flood storage that would be lost to the development. We have set out in Section 2.1 how we have incorporated water management and pollution control measures within our design and our proposals for diversion of the River Mole and Crawter's Brook to the west of the two runway airport boundary. There could be an opportunity to create a linear park south of the airport to include footpaths overlooking

the proposed river diversion from Crawter's Brook to the River Mole. We would like to work with the landowners concerned and other stakeholders to explore this further.

We will work closely with the Environment Agency to ensure that we comply with the EU Water Framework Directive and Environment Agency best practices. We will also work closely with the Water Authorities on the supply of water and the treatment of waste to the expanded two runway airport. We will focus design efforts to ensure that water is used efficiently. The Crawley Sewage Treatment Works is unaffected in all three options.

Table 11 identifies water-related indicators for the options.

### Local roads and public rights of way

We have explained in Section 2.3 our strategy for improving local road access and our plans to create an integrated network of public rights of way including footpaths, bridleways and cycle paths.

Table 12 shows the lengths of local roads, bridleways and public footpaths that would be affected.

Table 11 Water resource issues	Option 1	Option 2	Option 3
Floodplain loss (m3)	88,000	88,000	88,000
Volume of surface water attenuation required	65,640	188,301	189,488

Table 12 Local roads, public rights of way directly affected (km)	Option 1	Option 2	Option 3
Public footpaths lost	3	5.6	5.6
Public bridleway lost	1.4	2.6	2.6
Public footpaths added	7.2	9.4	9.4
Public cycle paths added	7.2	9.4	9.4

Table 13 Nature conservation - areas directly affected (ha)	Option 1	Option 2	Option 3
Local Nature Reserve (Willoughby Fields)	0	18.5	18.5
Site of Nature Conservation Interest (SNCI)	0	2.9	2.9
Loss of Ancient Woodland within Operational Boundary	1.8	7.7	7.7
Other Ancient Woodland which may be affected	5.9	7.8	7.8

# Section 2: Our runway options

## 2.4 Environmental and social effects of the options

### Ecology, heritage, landscape and visual impacts

The closest sites of international importance for nature conservation are the Mole Gap to Reigate Escarpment Special Area of Conservation (SAC) 9.5km to the north, and Ashdown Forest Special Protection Area (SPA), SAC and Site of Special Scientific interest (SSSI) 12km to the south-east. There are also several other SSSI, the closest of which is Glovers Wood ecological SSSI, 1.7km to the west.

We do not expect any effects on any of these sites from any of the Options.

Options 2 and 3 would result in the loss of around 15ha of the Willoughby Fields local nature reserve, which was designated in 2012, and includes the sports pitches of Crawley Rugby Club. This site, which has public access, is bordered by the River Mole, has two large meadows and extensive hedgerows. If Option 2 or 3 was taken forward for development consent in the future, we would work closely with Crawley Borough Council and the Rugby Club to identify and deliver appropriate replacement of these facilities.

All options would be likely to have some effect on woodland which would fall within the new two runway airport boundary. Options 2 and 3 affect about 4ha more ancient woodland than Option 1. We are focusing design efforts to retain some of this woodland within the airport boundary and are optimistic that the likely effects may yet be further reduced.

Outside the airport boundary, there would be further effects on ancient woodland and trees

subject to tree preservation orders. We are likely to need to reduce the heights of trees which fall within the zones which must be kept clear of obstacles so as to provide clear take-off and landing paths for the safe operation of aircraft. We will work closely with the CAA and our airline stakeholders to minimise such off-site impacts wherever possible.

All options may affect habitats supporting European Protected Species. Great crested newts and bats are already known to be present on the existing single runway airport and in the areas surrounding it. We will work closely with Natural England and other authorities to develop mitigation to avoid, reduce, and where necessary compensate for such effects.

Table 13 shows effects on other nature conservation sites and particular features of importance which may be affected.

### Listed buildings and archaeologically sensitive sites

Table 14 below shows listed buildings within the development boundaries, scheduled monuments and known archaeologically sensitive areas. No options affect Grade I listed buildings (the most valuable type of listing).

Options 2 and 3 affect two more Grade II\*, and five more Grade II listed buildings than Option 1. We recognise that other historic buildings are likely to be affected, and also that there may be effects to the settings of some listed buildings due to air noise or visual effects. For example Option 3 would be likely to generate some more noise impact on the Grade I listed Hever Castle than the other options.

Table 14 Cultural heritage features directly affected	Option 1	Option 2	Option 3
Grade I	0	0	0
Grade II*	3	5	5
Grade II	9	14	14
Scheduled monuments	0	0	0
Known archaeologically sensitive sites	3	3	3





# Section 2: Our runway options

## 2.4 Environmental and social effects of the options

No options directly affect scheduled monuments (SMs). In Options 2 and 3 the new development would border the Ifield Court SM and be closer to the Tinsley Green SM.

We will work closely with heritage authorities on how we should deal with listed buildings which would be affected, including exploring options to incorporate buildings within the development options, or to relocate them to new sites.

### Landscape character

No nationally designated landscapes would be directly affected by any of the potential runway development options for a two runway airport.

The northern boundary of the High Weald Area of Outstanding Natural Beauty (AONB) is about 3km to the south-east of the existing airport beyond Crawley. The Surrey Hills AONB is some 8km to the west of the existing airport. It is possible to see Crawley, Horley, and the existing airport from some elevated locations of both AONBs. Further to the north east is the Kent Downs AONB which is a little over 15km from the airport. The South Downs National Park lies beyond the High Weald AONB some 24km to the south of the airport.

We expect that where the existing facilities are visible, the expanded airport would be too. In due course we will prepare more detailed analyses comprising predicted zones of visual influence, and using photographic montages to show how the new development would appear. For longer distance views, there would be little difference between options.

More locally, West Sussex and Surrey County Councils, and Crawley Borough Council have defined landscape character areas around

Gatwick. Table 15 below shows that for all three options the proposed development would affect mainly the WSCC “Northern Vales” landscape character area which lies to the north of Crawley. Options 2 and 3 have a more southerly boundary than Option 1, which means that more of this area would be affected. We have included landscaping bunds and planting at selected areas of the boundary to help reduce views locally.

For all options there is likely to be very little change to the northern boundaries of the airport in comparison to the south. For Option 1, however, because there is less space between the runways, more development would be needed within the existing airport boundary to the north-west to provide for passenger terminal facilities and aircraft parking stands. This part of the airport boundary lies within 1km of Charlwood, the historic core of which is a Conservation Area.

An increase in building density in this location as required by Option 1 would, therefore, be more likely to result in impacts for Charlwood than either of the other two options.

For Options 2 and 3, the south-western boundary at Ifield Court would be within 500m of the northern edge of the Ifield Village Conservation Area boundary.

To the south-east, the realigned A23 would run alongside the airport operational boundary for all options. For Options 2 and 3 the airport boundary would fall within industrial areas as opposed to the more open space which presently exists between industrial areas to the north of Crawley and the airport.

Table 15 Landscape character areas directly affected (ha)	Option 1	Option 2	Option 3
Crawley	17.1	39.4	39.4
Northern Vales	377.2	536.2	542.4
Open Weald	5.5	5.5	5.5



# Section 2: Our runway options

## 2.5 Economic effects of a second runway



Gatwick is recognised as having a positive impact on the local economy. At the heart of this are the jobs that are created as a direct or indirect result of the airport operation. In turn, job creation brings demand for housing in the local area, which must be carefully managed.

This section sets out the local, regional and national economic effects which a second runway development would have.

### GLOSSARY OF TERMS

**We use some technical terms in this section which are explained below:**

**“Catalytic employment”** or **“attracted employment”** is a term used to describe the proposition that some companies with no obvious connection to the airport may choose to locate close to it as a result of its economic significance and good quality surface access connections. This could lead to clustering of some activities, which then generates other employment to service this cluster.

**“Direct airport related employment”** means those working directly for employers with a specific reason to locate on or around the airport.

**“Gatwick Diamond”** is a well-established area which relates to both planning and economic development activity across both the public and private sectors.

**“Gatwick Diamond Authorities”** are Crawley, Epsom and Ewell, Horsham, Mid Sussex, Mole Valley, Reigate and Banstead, and Tandridge.

**“Gross Value Added”** is a measure of economic gain resulting from development.

**“Indirect employment”** means those working indirectly for employers with a specific reason to locate on or around the airport.

**“Induced employment”** means the jobs created through direct and indirect workers consuming goods and services in the local area.

**“Productivity”** is an economic measure of output per unit of input. In employment terms, productivity improvement means achieving the same output with fewer staff. Therefore low productivity improvement results in more job creation for a given level of economic growth than high productivity improvement.



# Section 2: Our runway options

## 2.5 Economic effects of a second runway

### LOCAL ECONOMIC EFFECTS

In our July 2013 submission to the Airports Commission, we set out some initial analysis of the employment and housing growth which might be associated with a two runway airport. We made a commitment to engage with our local authorities to develop this work further. We have done so by establishing a regular working group with officers from the relevant councils, to understand, discuss and challenge our work on economic, employment and housing matters. This has been a very constructive process, and has helped us to produce more detailed analysis of the potential growth in employment and housing associated with each of our runway options.

#### Study area

Our assessment of employment growth associated with a two runway Gatwick was based on a study area comprising 14 local authority areas (below county level), with at least 1% of the 2012 Gatwick workforce as shown in Table 16 and figure 9.

It includes nearly 80% of the current work force, and stretches from Croydon in the north, right down to the south coast.

Much of the study area lies within an area defined as the Gatwick Diamond – an area which has a well-established focus on both planning and economic development activity across both the public and private sectors. The seven council areas of Crawley, Horsham, Mid Sussex, Mole Valley, Tandridge, Reigate and Banstead and Epsom and Ewell are together regarded as the Diamond in geographical terms for planning purposes. Six of these council areas are located within the Study Area, the exception is Epsom and Ewell which has less than 1% of the Gatwick work force living with its boundaries (therefore Epsom & Ewell is not included within these estimates of employment).

Table 16  
Study Area composition

Local Authority	% Gatwick On-Airport Employment
Crawley	31.8
Reigate & Banstead	9.4
Mid Sussex	8.2
Horsham	7.1
Brighton & Hove	6.0
Croydon	3.3
Wealden	2.5
Tandridge	2.4
Lewes	1.8
Arun	1.5
Mole Valley	1.4
Adur	1.3
Worthing	1.3
Eastbourne	1.0
<b>TOTAL STUDY AREA</b>	<b>79.1</b>

Around 60% of Gatwick's current workforce lives within the six Diamond council areas, (Three quarters of the Study Area total). It is an area that is likely to continue to have even greater significance in the context of a two runway airport.

Table 17 summarises the maximum expected increases in airport employment in the Study Area between 2025 and 2050/51 for each of the three options. If future productivity gains are higher than anticipated, then the number of new jobs created would be lower.

# Section 2: Our runway options

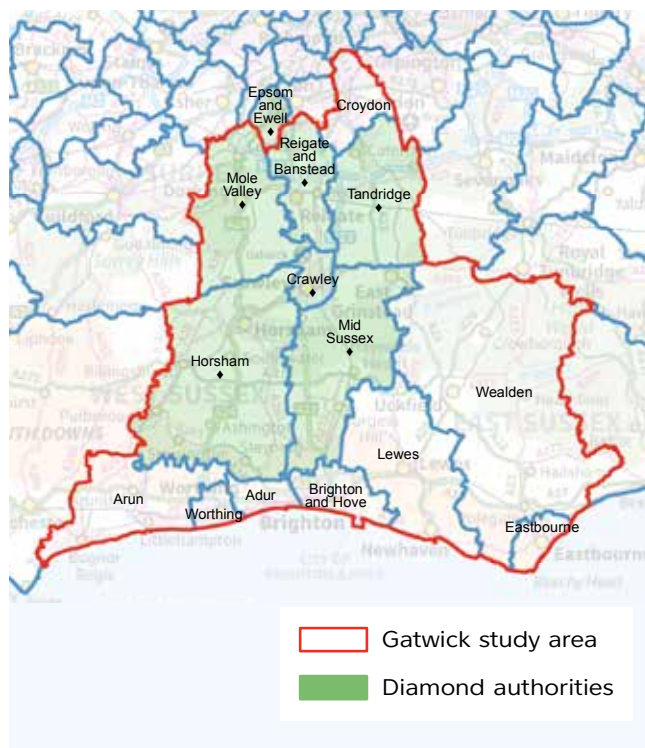
## 2.5 Economic effects of a second runway

### Analysis of the forecasts

The data illustrates the strong relationship between airport capacity and economic growth. Employment increases throughout the period for Options 2 and 3, reflecting the continuing increase in the number of passengers at the airport post-2040 which would continue to drive employment growth.

Additional employment associated with Option 1 declines slightly between 2040/41 and 2050/51 as traffic is not forecast to grow during this period due to Option 1's limited capacity.

**FIGURE 9: GATWICK DIAMOND AUTHORITIES AND STUDY AREA**



Option 3 generates the largest increase in employment by 2050/51 with an additional 17,500 employees compared to a single runway airport in 2050/51.

The Study Area represents around 80% of total employment, which means that the total increase in airport related jobs would be higher as some employment would be created outside the Study Area, mainly in London and the rest of the South-East.

Taking this into account, by 2050/51 under Option 3 55,200 jobs could exist because of the airport (direct, indirect and induced).

It is expected that the majority of airport related jobs would continue to be in the Gatwick Diamond area, on the airport itself or close to it.

If we reached 50 mppa with a single runway (which is our base case for a single runway Gatwick by 2050), we estimate airport related employment would be around 3.5% of total employment in the Study Area by 2050/51. With a second runway this would increase to a little over 5% on the basis of the largest option (Option 3). The equivalent increase for the six Gatwick Diamond authorities would be from a current level of around 8% to 12% of this smaller labour market.

Based on overall employment forecasts a two runway airport would account for around 11% of forecast job growth to 2050/51 in the Study Area. For the Gatwick Diamond it could be as much as 25%.

Table 17 Employment Increase Relative to Base in each year	2025/26	2030/31	2040/41	2050/51
Option 1	1,900	5,000	7,700	7,400
Option 2	2,600	6,300	12,500	15,200
Option 3	3,000	6,700	14,100	17,500

# Section 2: Our runway options

## 2.5 Economic effects of a second runway

### Airport related housing

We have agreed a methodology to assess future housing demand with our local authority working group. There are many factors to take into account when forecasting housing growth, since one new job does not equate to a need for one new home. Many new jobs would be filled by the local population, either by unemployed workers, young people entering the workforce, or people switching from a job outside the area, to working locally. Also, not all people moving into an area for airport related jobs will need a new home, as there may be more than one airport related worker in each new household.

Taking all of these factors into account, and assuming a maximum increase in airport related jobs of 17,500 (Option 3, 2050/51), the highest estimate of additional households moving in to the Study Area specifically associated with those jobs and requiring new housing is 7,000. This represents 4.1% of the additional households forecast to 2050/51 based on zero net migration.

About one third of the demand for new housing (2,400 homes) would arise within the Diamond (4.3% of additional households). If current planned levels of house building are assumed to continue to 2050/51, the new housing implications are about the same. Overall, whilst the Gatwick Diamond sees most of the employment increase, it has a lower proportion of the potential housing growth because of current commuting patterns.

### REGIONAL ECONOMIC EFFECTS

A two runway Gatwick will make a positive contribution to economic activity in the wider region, including Central London, South London, Docklands, Kent, Sussex and Surrey.

We have considered the issue of 'catalytic' and 'attracted' employment across the wider region. We anticipate clustering of some activities in locations including Croydon, London Bridge and Brighton which then generates other employment to service these clusters.

We are working with Croydon Council to ensure that it benefits from direct, indirect and catalytic effects as a result of its location on the main rail line between London and Gatwick.

These catalytic effects are distinct from those arising from employment that can be traced directly back to the operation of the airport itself. We will carry out a detailed Economic Impact Assessment to quantify these as part of the development process.

We have commissioned further detailed analysis of the likely regional economic effects and we will report our findings later this year.

### WIDER NATIONAL ECONOMIC EFFECTS

A fully utilised second runway at Gatwick would enable the airport's traffic to grow to between 66 mppa and 90 mppa depending on the option selected. Our analysis suggests that the higher growth options, (Option 2 and particularly Option 3), would enable demand for air travel in London and the South-East to be met until at least the 2040s.

The Commission has assessed the wider impacts of the capacity constraints on the economy at between £30 billion to £45 billion between 2021 and 2080, which could be alleviated through additional runway capacity. Both Options 1 and 2 would deliver less economic benefit, compared with Option 3; with Option 2 delivering around 10% less economic benefit than Option 3 (c.£26-40bn), with Option 1 delivering half of the economic benefit of Option 3 (c.£15-23bn).

We have commissioned further detailed analysis of the wider national economic effects and we will report our findings later in the year.

# Section 3: Our evaluation of the options



This section of the document explains how we evaluated and ranked the options in a provisional order of preference in terms of strategic fit, economy, surface access (road and rail), environment, people, cost, operational viability and deliverability.

We have reached the provisional view that Option 3 has the best performance overall, followed by Option 2, then Option 1.

We will use the responses to this consultation to refine our plans and to help us reach a firm view on the option we prefer. We will then ask the Airports Commission to take that option forward as part of its evaluation and subsequent advice to the Government.



# Section 3: Our evaluation of the options

In this section we describe our analysis of our three options, and we explain how we have ranked the options in an order of preference, with Option 3 being our provisionally preferred first choice. We will be reviewing our evaluation in light of the comments received through this consultation.

Our approach to evaluating the three options has been to assess and compare their performance against the criteria published by the Airports Commission and against our own criteria which we had proposed to the Commission. The two sets of criteria cover similar topics and reach the same conclusion on the relative performance of the options.

The Airports Commission's criteria summarise the issues well and are grouped under eight headings:

- Strategic fit;
- Economy;
- Surface access;
- Environment;
- People;
- Cost;
- Operational viability;
- Deliverability.

Each of the criteria addresses one or more questions along with explanatory text highlighting specific areas of interest.

## STRATEGIC FIT

This criterion seeks to identify how much additional capacity and connectivity could be delivered, and how and when this would be provided. Strong performance against the strategic fit criterion contributes to sustainability because providing additional capacity brings employment, investment and trade opportunities.

As explained in Section 2.2, Option 3 delivers the greatest runway capacity and consequently would accommodate more

passengers than the other options (up to 90 mppa in 2050 compared with up to 85 mppa for Option 2 and up to 68 mppa in Option 1). It can therefore be expected to provide the largest increase in connectivity (a measure of the volume of available flights and the number of destinations served). Option 3 also provides the most potential for the growth of the long-haul market alongside the short-haul network. Option 1 performs least well because it provides much less additional capacity as a result of its close spaced runway.

In its framework the Commission also seeks to understand whether the Government's wider objectives and legal requirements would be supported and met by the runway proposals. Performance against these requirements would be directly related to capacity provided by a proposal, so for example in terms of the Government's wider objectives for economic growth, tourism, aviation and infrastructure planning, the highest capacity scheme (Option 3) performs best.

## ECONOMY

This criterion seeks to assess the national and local economic benefits that the options would generate. Positive national, regional and local economic impacts promote the economic and social elements of sustainability.

We believe that the scale of economic benefits delivered by the options would increase broadly in-line with the additional runway capacity provided. Option 3 would provide the most capacity, would be forecast to support more flights and therefore would bring significantly greater benefits in terms of promoting economic growth and international tourism.

Similarly, at a local scale, the increases in regional employment and economic contribution would be expected to grow broadly in-line with passenger throughput. Section 2.5 shows that Option 3 would generate up to 17,500 additional jobs by



# Section 3: Our evaluation of the options

2050, located both on and off-airport, which is more than the other options, owing to its greater capacity. In this timeframe, Option 1 would generate 7,400 jobs and Option 2 would generate 15,200 jobs. Option 3 would also generate the largest contribution to the UK economy as a whole whilst Option 1 would bring the least benefits owing to its smaller passenger throughput.

This criterion also considers the wider impacts on the aviation industry in general. We believe the wider benefits for passengers, businesses and the aviation sector in general would again be maximised by Option 3 owing to the greater level of additional capacity created.

## SURFACE ACCESS

This criterion deals with how the proposed development would affect the demand for surface access and how this would be met. It also assesses impacts on local traffic and public transport use at the airport.

Providing adequate surface access promotes the economic and social elements of sustainability through increasing ease and efficiency of access, enhancing connectivity. Minimising growth in local traffic promotes the environmental element of sustainability by reducing noise and emissions, while reducing congestion and journey times also promotes economic and social elements through enabling more efficient use of time.

As explained in Section 2.3, we have identified a range of already committed and new road and rail schemes which would provide the necessary capacity to accommodate the extra demand resulting from a second runway. The surface access proposals are similar for all options, both in terms of infrastructure and journey times, and therefore we do not see a significant difference between the options in this respect.

We have also explained how sufficient capacity on the road and rail network would be available in all three options for local journeys in the vicinity of Gatwick. For all options, local journey times are expected to be similar to the existing situation. However, owing to their higher passenger volumes, Options 2 and 3 can be expected to provide a much better 'Gatwick Gateway' interchange facility than Option 1, facilitating connections between rail, coach and bus services. This is because the higher passenger volumes would support the business cases for growth of existing and new public transport services. However, Option 1 would have less impact on local roads around Manor Royal owing to its lower land take. In terms of the overall impact on local journeys all options are considered broadly equal.

We believe that the measures outlined in Section 2.3 would, for all options, promote a higher use of public transport than today. However, owing to their greater passenger throughput, we believe that Options 2 and 3 would be likely to support a wider range and volume of local bus and regional coach services and consequently they would be likely to have a higher public transport mode share than Option 1.

## ENVIRONMENT

This criterion reviews the environmental impacts of the proposals including air quality, noise and to the impact on designated sites and climate change. Minimising and mitigating negative environmental effects contributes to environmental sustainability.

We have provided data on the comparative environmental impacts of the options in Section 2.4. From this we have drawn the following conclusions:

In terms of air quality we have explained that, with all three options, the predicted concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> would be significantly below the legal limits, as they are today, including within the Horley

# Section 3: Our evaluation of the options

Air Quality Management Area. Similar concentrations of NO<sub>2</sub> would be expected in all options. That said there is likely to be a small but measurable difference between the options owing to their different capacities. Option 1 can be expected to result in the lowest level of pollutant emissions owing to its smaller throughput.

In terms of noise, Section 2.4 shows how the options compare in terms of air and ground noise impacts. For air noise, Option 1 has the lowest impacts owing to the smaller number of flights and the closer runway separation, meaning that flight paths are further from Crawley and Copthorne. Both Options 2 and 3 increase noise impacts on these residential areas owing to their wider separation, with Option 3 affecting the most people owing to its greater number of flights. For example, Option 1 will have 2,700 people in the 57dB LAeq contour in 2040, Option 2 will have 11,900 and Option 3 will have 14,400.

We have explained that none of the options would have a direct physical impact on internationally or nationally designated nature conservation sites, National Parks, World Heritage Sites, Areas of Outstanding Natural Beauty or National Trails. In terms of impact on designated sites, the principal differences between the options would be as follows:

- Options 2 and 3 may have a greater impact on the setting of the nearby scheduled monuments;
- Options 2 and 3 would both affect 14 Grade II and 5 Grade II\* listed buildings while Option 1 affects 9 Grade II and 3 Grade II\* listed buildings;
- Option 3 would be likely to generate some more noise impact on the Grade I listed Hever Castle than the other options.

We have also described how the three options compare in terms of carbon, one of the main contributors to greenhouse gas emissions. This shows that there is a strong

relationship between the volume of flights forecast for each option and the quantity of carbon produced. Therefore Option 3 is predicted to have the greatest impact in terms of carbon and Option 1 the least impact.

In terms of other environmental effects we have considered how the options compare with regard to their impact on water courses and floodplain and also their impacts on locally protected sites, habitats, historic features, landscape and amenities.

Option 1 would have fewer impacts than Options 2 and 3 on existing floodplains and would reduce the length of river diversions required. Owing to its lower land take it would also have lesser impacts on other local environmental features, for example Willoughby Fields Local Nature Reserve, ancient woodland to the west of the airport, and amenities such as public rights of way and Crawley Rugby Club. The impacts of Options 2 and 3 would be broadly the same owing to the similarity of the land take.

## PEOPLE

This criterion assesses how the proposals impact on the airport user experience as well as the social impacts experienced in the local region. Reducing negative and enhancing positive social effects for people contributes to the social environmental and economic elements of sustainability.

Option 3 would add the most runway capacity to the London airport system and therefore would allow for more of the demand for air travel to be met. More capacity would also promote a wider range of international connections and more frequent services bringing benefits of choice and accessibility to passengers. Option 1 would have the least capacity and would therefore bring fewer benefits than the other options.

# Section 3: Our evaluation of the options

In terms of the quality of the passenger experience we believe all options could deliver an appropriate level of service for passengers, but Options 2 and 3, where new terminals are planned, would offer a better overall experience to airport users. Option 1 would rely more heavily on existing terminal infrastructure, which would constrain the service improvements that can be made.

In terms of the social impacts experienced in the locality, Options 2 and 3 would have greater impacts on existing community facilities, employment and housing owing to their greater land take. This would be most noticeable in their impact on the businesses located on the northern outskirts of Crawley (although as described in Section 2.4 there would be the opportunity to make land available for the re-provision of these). In relation to additional employment and housing pressures resulting from the airport expansion, Option 3 would have the most impacts owing to its higher capacity and Option 1 the least.

## COST

Option 1 would cost less to build than the other options owing to its lower capacity and therefore lower land take and infrastructure requirements. Option 3 would be the most expensive.

However, when comparing the options it is more meaningful to consider the cost per additional passenger. In this case Option 1 becomes the most expensive scheme, while Options 2 and 3 are broadly equivalent.

We believe that we will be able to finance the airport development privately without needing public funds.

## OPERATIONAL VIABILITY

This criterion addresses operational safety and resilience issues and airspace constraints.

We believe that all three options would be capable of meeting UK and international safety standards. However there would be some differences between the options in terms of their level of operational resilience. With two mixed-mode runways, Option 3 has more flexibility in the way it can operate than the other runway options. For example, Option 3 has a higher departures peak capacity than the other options. Therefore if delays have been caused by bad weather, a back-log of departing flights could be cleared more quickly with Option 3 than the other options. Option 1, with close-spaced dependent runways, would have the least operational resilience.

Options 2 and 3 would also benefit from having aprons between the runways, reducing taxiing distances and the need for runway crossings.

All options would require changes to be made to the existing airspace so at this stage we do not see this as a differentiator between options.

## DELIVERABILITY

This criterion assesses delivery risks in the proposals.

We have not identified significant construction delivery risks for any of our proposals so they all have a similar performance on this measure. However we note that there would be an opportunity with Options 2 and 3 to separate terminal and apron construction from the existing airport operation. This would not be possible in Option 1 where the North Terminal would need to be expanded and a satellite terminal built on the operational apron, which would result in greater complexity during construction.

# Section 3: Our evaluation of the options

In terms of planning risk, on the principle of a second runway at Gatwick the options are indistinguishable. The key consideration in assessing overall planning risk would be the additional airport capacity sought by Government policy. Until that is determined, the same conclusion applies.

Option 1 carries a marginally lower financing risk than options 2 and 3 as a result of its lower cost.

## CONCLUSIONS

Having reviewed the options' performance against the Commission's criteria and against our own, we have reached the following provisional view.

- Option 1 had the lowest environmental and social impacts of the three options owing to its lesser land take and the lower volume of flights accommodated;
- However, Option 1 delivers much less runway capacity than Options 2 and 3, with Option 3 delivering the highest runway capacity. For Option 1 the additional passengers served in 2050 would be around half those served with Option 3. Given the Commission's interim findings on the need and timing of an additional runway, Option 1's lower capacity would bring forward the need for a second further runway in the South-East, the impacts of which would be significantly deferred with Option 3 and to a lesser extent Option 2;
- Options 2 and 3 provide more capacity, which brings significantly greater local, regional and national benefits in terms of better connectivity, more employment opportunities and a higher level of economic growth with associated social benefits;

- There is not a great difference between the options in terms of surface access although we note that Options 2 and 3 are likely to support more public transport usage owing to their greater capacities;
- Option 3 provides the best overall operational solution with more flexibility and resilience. It has a similar land take to Option 2 but provides significant additional capacity.

In conclusion we believe that, having ranked the Options in an order of preference, Option 3 has the best overall performance, followed by Option 2, then Option 1.

Whilst Option 1 has the lowest overall environmental impact Option 3 brings the greatest social and economic benefits, greatest operational efficiency, and lower impacts per passenger.

Option 2 brings greater social and economic benefits and operational efficiency than Option 1, but performs less well than Option 3 in these elements. Option 2 also has lower impacts per passenger than Option 1.

Option 3 best meets Government and regional development aspirations, and delays the need for yet another new runway with associated land take impacts in the future.

Therefore, at this time, Option 3 is our provisionally preferred first choice. However we will be reviewing this in the light of the comments received through this consultation process.



# Section 4: Community engagement



A second runway at Gatwick could see the number of planes landing or taking off at Gatwick double by 2050 compared to the present level. So with more planes flying, it is as important as ever that we keep working to get the noise levels down.

In the past, big infrastructure projects have been criticised for not providing enough financial compensation to local communities.

That is why we believe that our plans to reduce the impact of a second runway

should include proposals to ensure that people most affected by expansion at Gatwick are compensated financially.

If the Airports Commission recommends Gatwick as the location for the next runway we will consult on the best ways of doing this.

We explain in this section of the consultation document the range of measures we are minded to introduce to compensate for the impacts of the second runway. These would build on existing measures and introduce new ones.



# Section 4: Community engagement

## 4.1 Working with our communities

Gatwick's position as one of the area's largest businesses means we play a significant role in the community. Our operations mean we have impacts in other areas and as a result we strive to recognise our responsibilities and work with our community to be a good neighbour.

We regularly meet representatives from local communities, councils, residents and interest groups to discuss airport issues. We work with local charities and we have excellent links with local schools, colleges and universities to help inspire and motivate young people. This is done formally through the Gatwick Airport Consultative Committee, and also informally through regular contact with specific organisations such as our local councils.

We worked with West Sussex County Council and Crawley Borough Council to draw up an Agreement setting out our obligations and commitments to make Gatwick more sustainable.

We have established a set of commitments, which we refer to as our Decade of Change, to keep track of our performance against some key indicators like water, waste and carbon. Our performance is independently audited and we report annually on progress.

Our Decade of Change 2020 priorities for the existing airport are:

- Energy and water consumption – a 20% reduction in energy consumption against our 1990 baseline with 25% of energy to come from renewable sources and a 20% reduction in water use against the 2010 baseline;
- Waste – generate no untreated waste to landfill and achieve a 70% waste recycling rate;
- Surface water – continually improve the quality of water leaving the airport;
- Biodiversity – have an award-winning biodiversity approach through achieving a nationally recognised award for ecological awareness.

We would make similar commitments for any second runway development to ensure that our sustainability performance continued to improve.

We work with our partners to ensure that our strategic approaches are aligned in order to achieve these targets. We monitor and report our performance against our 2020 targets every year.

### Local authority working group

The Gatwick Officers Group (GOG) comprises Gatwick and representatives of our Local Authorities. It was agreed in June 2013 that five working groups would be established to give ongoing consideration to issues arising from development of a second runway at Gatwick. The working groups are:

- WG1: Economic and employment issues (including housing);
- WG2: Air Quality;
- WG3: Land use/environmental impacts;
- WG4: Surface Access;
- WG5: Noise and Airspace.

# Section 4: Community engagement

## 4.2 Tackling noise

Working with Government, the aviation industry (airports, airlines, air traffic control and aircraft manufacturers) works continuously to reduce the noise levels at airports.

As an industry, the four main things we are doing are:

1. Designing airframes and engines to reduce noise generation;
2. Tightening the regulations on noise;
3. Improving the way planes and airports operate;
4. Providing noise insulation and compensation for people who continue to experience high noise levels.

Aircraft today are much quieter than they were 40, 30 or even 20 years ago, and will be replaced by even quieter aircraft in the future.

Notwithstanding this, our second runway development if approved by Government could see the number of planes landing or taking off at Gatwick double by 2050 compared to the present level. So with more planes flying, it is as important as ever that we keep working to get the noise levels down.

### Airspace Modernisation

We are working in partnership with National Air Traffic Services (NATS) on the first ever London Airspace Consultation to propose a new design concept which would replace the existing aircraft approach and departure routes at Gatwick. The aim is to deliver significant local environmental benefits including fewer CO<sub>2</sub> emissions and fewer people affected by aircraft noise, as well as fuel savings for airlines.

Whilst the measures we will report on then will relate only to our current single runway airport, the same approaches to reduce noise and CO<sub>2</sub> emissions through careful airspace design will be applied to which ever runway option is selected.

Although the consultation has now ended, you can read more information about the airspace modernisation project and read the report when it is published at [www.londonairspaceconsultation.co.uk](http://www.londonairspaceconsultation.co.uk)

### Noise Monitoring and Fines

Gatwick has a network of noise monitors around the airport to monitor the noise of departing planes at specific locations. Planes that break the noise limits are fined £500 by Gatwick Airport Ltd for the first 3dB over the limit and £1,000 above that. We don't keep any of the money we raise from the fines. Instead we use it to support local community projects through the Gatwick Airport Community Trust. The Trust, which is independently-managed, supports local sports and arts initiatives focused on developing local youngsters. We're also committed to environment conservation projects and supporting other community organisations and facilities.

It is Gatwick Airport's responsibility, together with the Government, airlines and Air Traffic Control (ATC), to do everything we can to reduce noise levels and to mitigate noise impacts.

Should we make a planning application for a second runway in the future, we will include a range of measures to mitigate and to compensate for the impacts of a second runway at Gatwick. These will build on existing measures and introduce new ones.

We set out in the next section how we propose to take responsibility for our impacts.

# Section 4: Community engagement

## 4.3 Taking responsibility for our impacts

In the past, major infrastructure projects have been criticised for not providing enough financial compensation for the impacts they have on local communities.

That is why we believe that our plans to reduce the impact of a second runway should include proposals to ensure that people most affected by expansion at Gatwick are compensated financially.

If the Airports Commission recommends Gatwick as the location for the next runway we will consult on the best ways of doing this.

Gatwick has recently announced a significantly expanded noise insulation scheme which is one of the most innovative at any airport in Europe. The noise threshold for the scheme has been reduced, with the boundary line drawn flexibly to ensure entire streets and communities are included. The boundary has also been extended along the flight paths by 15km to both the east and west of the airport. Eligible homes can apply for up to £3,000 towards double glazing for their windows and doors and loft insulation. Over 40% more homes are now eligible than under the old scheme.

Whilst the present scheme relates to our current single runway airport, this would be extended to cover the equivalent area for the second runway should this be built. Again we would draw the boundary line for this scheme flexibly to ensure entire streets and communities were included.

If we seek development consent for a second runway at Gatwick in the future, we will include measures to mitigate and to compensate for the impacts of the second runway. These will build on existing measures and introduce new ones.

We are considering measures to create a 'Community Dividend' for our local area, including:

- **A Council Tax Initiative** – whereby Gatwick would pay a contribution every year to the Council Tax of residents most affected by the increased flights resulting from a second runway;
- Expanding funding to the existing **Gatwick Community Trust**, an independent charity that awards each year grants of around £1000-5000 to a number of deserving projects within parts of East and West Sussex, Surrey and Kent;
- A new **Gatwick Foundation** funded by the airport, to build on the work of the Community Trust with funding directly linked to growth in passenger numbers at the airport.

These measures would not affect any legal requirement for us to pay compensation or to enter into any necessary planning obligations under Section 106 of the 1990 Town and Country Planning Act.

The measures would be in addition to our existing voluntary support to deal with potential property blight, which includes our Property Market Support Bond Scheme and Home Owner Support Scheme.

# Section 4: Community engagement

## 4.3 Taking responsibility for our impacts

### Proposed Council Tax Initiative

We are considering a scheme under which an annual contribution would be paid toward the Council Tax of residents most affected by noise and increased aircraft movements resulting from the operation of a two runway airport.

Under this initiative, our current intention is that eligible Council Tax payers living within an independently defined noise contour would be able to apply for a **£1000 per year payment toward the cost of their Council Tax**.

In order to be eligible, Council Tax payers would have to be resident and registered for Council Tax when the scheme is introduced, and their homes would have to be within the boundary of a 57 dBA LAeq 16 hour noise contour, which is the Department for Transport's contour for the onset of noise annoyance.

This proposed scheme would include homes already within the existing single runway's contour, because we recognise that they would also be affected by intensification of traffic due to R2. The contour, which would be updated every five years to ensure it reflects actual noise performance, would be calculated independently by the Civil Aviation Authority.

The eventual shape and size of the contour will depend upon the eventual option chosen, detailed design of the second runway, and the airspace around the airport.

### Expanded Community Trust and new Gatwick Corporate Foundation

We are considering proposals whereby either an enlarged Community Trust and/or a new Gatwick Foundation would operate alongside the Council Tax Initiative and the other existing mitigation measures including the noise insulation and blight schemes.



The Gatwick Community Trust is an independent charity that awards grants annually for deserving projects within the area of benefit covering parts of East and West Sussex, Surrey and Kent.

In particular, funds are channelled to those areas where people are directly affected by operations at Gatwick Airport. The Trust 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.

The normal level of grants is from £1,000 to £5,000.

Gatwick funds contributions, increasing these each year in line with RPI. In addition, the Trust receives money raised through noise fines on those airlines that infringe noise limits set by the UK Government for aircraft taking off at Gatwick Airport. In 2012 Gatwick contributed £182,000. The Trust currently has no income generating assets.

The purpose of setting up the Trust was to ensure that, as the airport continued to grow, funds should be made available to a board of independent trustees, who would direct the funds back into the community affected by the airport's growth.

# Section 4: Community engagement

## 4.3 Taking responsibility for our impacts

We are also considering creating a new charitable corporate foundation. Charitable corporate foundations are charities established by commercial companies. Many of the foundations are high profile sharing the name of the company that set them up and can generate significant community benefit. There are over 100 corporate foundations in England and Wales benefiting the public in a variety of ways.

The concept would be for the corporate foundation / charitable trust to receive its income through a mechanism that had a direct correlation with the growth of passenger numbers commensurate with the opening of a second runway.

### Tackling potential blight

Gatwick has two voluntary schemes which will apply if Gatwick builds a second runway after 2019.

- The **Home Owner Support Scheme** is for homes which would be close to the expanded airport boundary, and which would be newly exposed to medium to high levels of aircraft noise;
- The **Property Market Support Bond** is for homes which would need to be bought to develop the second runway.

Full details of both schemes are available at [www.gatwickairport.com/consultation](http://www.gatwickairport.com/consultation)

We explain here briefly below how the two schemes work.

### Home Owner Support Scheme

Property owners are not usually able to apply for compensation until a year after a new runway comes into use, when owners can seek compensation for the loss in value of their property under the Land Compensation Act 1973.

It will be many years before any new runway would be open. In the meantime, there is no legal obligation to provide any support, even though property values could be affected in the years before the development opens.

The statutory compensation is not always enough to keep a property marketable during this period. To allow for this, certain owner-occupiers have an entitlement in law to serve a Blight Notice, allowing them to require the promoter to purchase their property. These provisions only apply in tightly defined circumstances, and are set out in the legislation.



# Section 4: Community engagement

## 4.3 Taking responsibility for our impacts

### Aims of the Home Owner Support Scheme

The Home Owner Support Scheme supports owners of properties which, if development went ahead, would be newly exposed to medium-to-high levels of noise (66 decibels Leq).

Our voluntary scheme means that people will not have to wait until any new development has opened for any support or assistance against blight, as they would usually have to if Gatwick only fulfilled its legal obligations.

Eligible property owners can require Gatwick to purchase their property for its unblighted market value (as if no runway development had been proposed) if Gatwick announces its intention to proceed with construction (having received the necessary consents).

The objective is to avoid negative impact on property prices caused by the proposed runway development by making sure that affected properties can be bought and sold at normal market rates in the years before development takes place.

#### Who is eligible for the Home Owner Support Scheme?

We published in 2005 a map showing the zone which would be covered by the scheme - those newly exposed to medium-to-high (66 decibels Leq) levels of noise. If we are selected by the Airports Commission as the location for the next runway, we will publish an updated zone. Those within the original zone will remain eligible for the scheme, even if they fall outside the new zone.

If you are within the original zone you may already have been contacted by Gatwick in the past. Gatwick will contact all residents within the zone when the zone is updated.

### Property Market Support Bond

Where land and properties need to be bought for a development such as a new runway, the law provides for the developer to apply for a Compulsory Purchase Order as part of the process of obtaining development consent to build its scheme.

With a Compulsory Purchase Order, the land and property have to be bought by the developer at a fair, unblighted market price (i.e. as if no reduction in value had occurred). Eligible property owners are therefore guaranteed compensation under law for the market value of their property. However, this compensation is only paid once the developer has taken the property.

If a second Gatwick runway goes ahead, it will be many years before development consent is given and properties will have to be acquired. In the meantime, in many cases there is no legal obligation to provide compensation, even though property values could be affected in the years before Compulsory Purchase Order is confirmed.

Some owner-occupiers do have an entitlement in law to serve a Blight Notice, allowing them to require the promoter to purchase their property at market value before the development goes ahead. These provisions however only apply in tightly defined circumstances, which are set out in legislation.

# Section 4: Community engagement

## 4.3 Taking responsibility for our impacts

### Aims of the Property Market Support Bond

Our voluntary scheme means that people won't have to wait until development consent is granted for any support or compensation against blight, as they would generally have to if Gatwick only fulfilled its legal obligations.

Our voluntary scheme supports property owners by making sure those properties in the area where land would be needed for any new runway development can be bought and sold at normal market rates in the years before any development takes place, so as to counter any negative impact on property prices caused by the proposed runway development.

People who take part in the scheme may sell their property to Gatwick, if Gatwick announces its intention to apply for consent to build a second runway.

### Who is eligible for the Property Market Support Bond?

The scheme applies to the area where land would be needed by Gatwick for the new runway development. We published a plan showing the boundary of this area in 2005. We will update this boundary if selected by the Airports Commission, although those within the initial boundary will remain eligible even if they fall outside the updated boundary.

If you are within the existing boundary you may already have been contacted by Gatwick in the past. Gatwick will contact all residents within the new area when an updated area is confirmed in due course.

# Section 5: Your opportunity to get involved



## HOW TO RESPOND

You can respond to the consultation in one of the following ways:

- by completing a response form online at [www.gatwickairport.com/consultation](http://www.gatwickairport.com/consultation)
- by sending your response by email to [gatwickrunwayconsultation@ipsos.com](mailto:gatwickrunwayconsultation@ipsos.com)
- or by sending a response form by freepost to the following address:

**Freepost RSLG ATKL LBAE**  
**Gatwick Runway Consultation**  
**Ipsos MORI**  
**Research Services House**  
**Elmgrove Road**  
**Harrow**  
**HA1 2QG**

You do not need a stamp.

Please provide views and comments on "A Second Runway for Gatwick: Our April 2014 Runway Options Consultation" only.

Please only use the channels described here when responding to this consultation. Gatwick Airport Ltd cannot accept responsibility for ensuring that responses sent to any other addresses are included in this consultation. We will acknowledge receipt of email and online submissions but we are not able to acknowledge postal submissions.

**The deadline for responses is 16 May 2014.**

Four of our neighbouring local authorities are holding local elections on 22 May 2014. Due to the changes that will inevitably take place to the composition of these councils, we have agreed to extend the deadline for their responses. This has been agreed due to the exceptional circumstances. No other extensions to deadline can be considered due to the timescales we must meet within the Airports Commission process.

# Section 5: Your opportunity to get involved

## Public Exhibitions

We are holding public exhibitions during the consultation period where you can find out more about our proposals.

### The venues are:

<b>Crawley</b>	Sat 5 April	11am - 3.30pm	The Hawth, Crawley, RH10 6YZ
<b>Rusper</b>	Mon 7 April	4pm - 7.30pm	Hunsdon Hall, Ghyll Manor Hotel, RH12 4PX
<b>Smallfield</b>	Tues 8 April	4pm - 7.30pm	Centenary Hall, RH6 9PT
<b>Ifield</b>	Wed 9 April	4pm - 7.30pm	Ifield Community College, RH11 0DB
<b>Lingfield</b>	Fri 11 April	4pm - 7.30pm	Pavilion Suite, Lingfield Park Racecourse, RH7 6PQ
<b>Felbridge</b>	Sat 12 April	11am - 3.30pm	Treo Suite, The Felbridge Hotel, RH19 2BH
<b>Epsom</b>	Tues 15 April	4pm - 7.30pm	The Ebbisham Centre, KT19 8AG
<b>Crowborough</b>	Thurs 17 April	4pm - 7.30pm	Crowborough Community Centre, TN6 1FE
<b>East Grinstead</b>	Tues 22 April	4pm - 7.30pm	Kings Centre, RH19 3LN
<b>Reigate</b>	Wed 23 April	4pm - 7.30pm	Reigate Community Centre, RH2 9AE
<b>Crawley Down</b>	Fri 25 April	4pm - 7.30pm	The Haven Centre, RH10 4LJ
<b>Horley</b>	Sat 26 April	11am - 3.30pm	The Studio, Horley Leisure Centre, RH6 8SP
<b>Charlwood</b>	Mon 28 April	4pm - 7.30pm	Parish Hall, 92 The Street, RH6 0DR
<b>Dorking</b>	Thurs 1 May	4pm - 7.30pm	Masonic Hall, Dorking Halls, RH4 1SG
<b>Edenbridge</b>	Fri 2 May	4pm - 7.30pm	The Eden Centre, TN8 6BY
<b>Horsham</b>	Sat 3 May	11am - 3.30pm	Drill Hall, RH12 1JF

Once the consultation is completed, we will consider and review all submissions. We will publish a Report of Consultation explaining how we have responded to the submissions made.

## GETTING IN TOUCH

If you have any questions about this document and its content, about our public exhibitions or about the response form, please contact us.

You can call us on: **0800 2600 538**

Alternatively you can email:

[consultationqueries@gatwickairport.com](mailto:consultationqueries@gatwickairport.com)

You can write to us at:

**Freepost RSLG ATKL LBAE**  
**Gatwick Runway Consultation**  
**Ipsos MORI**  
**Research Services House**  
**Elmgrove Road**  
**Harrow**  
**HA1 2QG**

If you would like a copy of this document in large print or in another language please call us on 0800 2600 538



# Appendices

# Appendix 1: Policy and context

The Airports Commission is examining the need for additional airport capacity, and will be recommending to Government how this can be met in the short, medium and long term.

## 1. NATIONAL POLICY

### The Airports Commission

In September 2012, the Government established the independent Airports Commission, chaired by Sir Howard Davies, to consider the UK's runway capacity needs in the short, medium and long term. The final outcome of the Commission's work, due in summer 2015, will inform the subsequent development of Government policy in the form of a National Policy Statement for aviation.

We have engaged fully with the Commission and in July 2013 we put forward our case that Gatwick should be the location of the UK's next runway.

Our July submission document is available on our website at [www.gatwickairport.com/consultation](http://www.gatwickairport.com/consultation)

In its December 2013 Interim Report the Airports Commission included Gatwick in its shortlist of potential locations for the UK's next runway. The schemes shortlisted by the Commission were:

- A second runway at Gatwick, to the south of the existing runway, over 3,000m in length spaced sufficiently south of existing runway to permit fully independent operation
- A third runway constructed to the north-west of Heathrow – as proposed by Heathrow Airport Ltd
- An independent proposal for extension of Heathrow's existing northern runway to enable the runway to be operated as two separated runways – as proposed by Heathrow Hub Ltd

The Commission is also carrying out further investigation on a proposal for an airport in the Thames Estuary, and will decide later in 2014 whether such an option should also be shortlisted.

The Airports Commission will carry out a national consultation later in 2014 on whether a runway should be built at Gatwick or elsewhere.

In 2015 the Airports Commission will recommend to Government where the UK's next runway should be built.

Paragraph 6.74 of the Airports Commission's Interim Report states:

"Gatwick Airport Ltd has proposed that a new runway should be constructed south of the existing one. It has identified three options: close-spaced, wide-spaced/dependent operation and wide-spaced/independent operation. The Commission's assessment has focused on the last – a runway over 3,000m in length spaced sufficiently south of the existing runway (at least 1,035m) to permit fully independent operation. This offers the greatest increase in capacity while still having relatively low environmental and noise impacts compared with some other potential sites. The Commission will, however, keep this under review as it takes forward more detailed development and appraisal. The proposal also includes related new terminal facilities and taxiways between the new and existing runways."

# Appendix 1: Policy and context

## Climate change policy

The Airports Commission has noted that whilst work on a comprehensive European Emissions Trading Scheme has been suspended in the face of opposition from non-EU governments and airlines, work is under way to prepare a global agreement on aircraft emissions, but the outcome of this work is not certain.

The UK's own obligations are enshrined in the Climate Change Act of 2008 and the Committee on Climate Change December 2009 report states that further growth in aviation could be reconciled with the Government's climate change objectives, as long as planned emissions reductions were delivered elsewhere in the economy.

The Commission's view is that an overall framework for managing the carbon impacts of aviation will be required if the UK is to achieve its statutory carbon targets – just as it will in other countries. This is the case whether new runway capacity is provided in the south-east or not.

## The 2013 Aviation Policy Framework

In December 2010 the Secretary of State for Transport announced that the Government would look to prepare a new “sustainable framework for aviation, which will support economic growth...as well as addressing aviation's environmental impacts”.

In 2011 the Government published and invited comments on a ‘scoping document’, which set out key themes and issues that the policy will need to address. The Government subsequently consulted on a Draft Aviation policy framework in July 2012 and published its final Aviation Policy Framework (APF) in March 2013.

The APF sets out the Government's high-level strategy and overall objectives for aviation. These include:

- to ensure that the UK's air links continue to make it one of the best connected countries in the world;
- 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.

These objectives define the parameters within which the Airports Commission is undertaking its work.

## The Planning Act 2008

If a second runway at Gatwick is ultimately selected by the Airports Commission and supported by Government it is likely that the next step would be for Government to draft and consult on a National Policy Statement (NPS) for Aviation, accompanied by an Appraisal of Sustainability (AoS). The Government has asked the Airports Commission to produce materials to support them in preparing an Aviation NPS and accompanying AoS and to support the resolution of any future planning application.

Once an NPS is published, we would expect that our proposal would be progressed as a Nationally Significant Infrastructure Project under the Planning Act 2008 (The Act). The Act sets out detailed procedures to be followed by applicants, Local Planning Authorities and decision takers for the consenting of major infrastructure projects across England and Wales. The procedures include a requirement for formal public consultation with certain prescribed persons and bodies, and a duty to consult the local community. This includes consultation at the option development stage, as well as subsequent consultation on the detail of the chosen option.

# Appendix 1: Policy and context

Our current public consultation is aimed at ensuring that our local community and all relevant stakeholders are able to comment on our runway options. We will use the responses we receive to this consultation to refine our plans.

## The National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published on 27 March 2012 and sets out the current Government's intentions to reform the planning process. The NPPF promotes sustainable growth through a 'presumption in favour of sustainable development'. It sets out principles for the planning system which a development such as a new runway will need to take into account if the project is to be given development consent. To deliver sustainable development, the Government sets 13 priorities:

1. Building a strong, competitive economy
2. Ensuring the vitality of town centres
3. Supporting a prosperous rural economy
4. Promoting sustainable transport
5. Supporting high quality communications infrastructure
6. Delivering a wide choice of high quality homes
7. Requiring good design
8. Promoting healthy communities
9. Protecting Green Belt land
10. Meeting the challenge of climate change, flooding and coastal change
11. Conserving and enhancing the natural environment
12. Conserving and enhancing the historic environment
13. Facilitating sustainable use of materials

## 2. LOCAL POLICY

### West Sussex County Council

In 1979 the British Airports Authority entered into a legal agreement with West Sussex County Council preventing the construction of a new runway before 2019.

Gatwick remains fully committed to honouring the 2019 agreement. However the timescale for the Airports Commission's work, the need thereafter for the Government to prepare a National Policy Statement, and the time required thereafter for a Development Consent Order process to be progressed, mean that, in effect, construction could not commence before 2019 in any event, and that the 2019 agreement is therefore no longer a constraint on the development of a second runway at Gatwick.

### Crawley Borough Council Policy

The Gatwick Airport site is located entirely within the administrative authority of Crawley Borough Council. The statutory Development Plan for Crawley Borough Council comprises:

- Crawley Borough Local Development Framework (LDF) Core Strategy October 2008 Revision (adopted November 2007)
- Crawley Local Plan (2000) Saved Policies
- LDF Proposals Map

Crawley Borough Council is currently working on a new Local Plan that will guide the Borough until 2029. It aims to have the new Local Plan adopted by December 2014. The Council has already completed its consultation stage, and an Examination in Public is due to take place later this year. The Crawley Core Strategy supports the principles of sustainable development and identifies Gatwick as a contributor to helping the region meet its need for sustainable development.



# Appendix 1: Policy and context

## Safeguarded Land

The 2003 Air Transport White Paper called for land for a second runway at Gatwick to be safeguarded. The safeguarding arrangement remains in effect. The safeguarded land is predominantly within Crawley Borough, but also includes some land in Horsham and Mole Valley Districts. The safeguarding is reflected in local planning policies.

A safeguarding map, endorsed by the CAA, was prepared for Gatwick and was lodged with the relevant local planning authorities in Autumn 2006. The map relates both to the existing runway and to a notional parallel southern runway, positioned 1,035m apart, and indicates a boundary for the safeguarded area.

Any planning applications for new development in the Safeguarded Area are considered according to a particular planning policy in Crawley Borough Council's Core Strategy. This policy prevents development that would be incompatible with the development of a second runway and associated facilities in the event that such a proposal was to be supported in national policy.

## 3. GATWICK POLICY

### Gatwick Masterplan

We published our draft airport masterplan for public consultation in October 2011. This was the largest consultation in the airport's history. Having reviewed and acted on all the views we received, we published our finalised masterplan in July 2012.

The masterplan was based on a single runway Gatwick and an objective of growing to a throughput of 40 million passengers per annum (mppa) by 2021/22. We also considered how Gatwick might look by 2030, both as a single runway airport, and also potentially as a two runway airport, including safeguarded land (as set out in the 2003 White Paper). The Gatwick Masterplan is available at [www.gatwickairport.com/consultation](http://www.gatwickairport.com/consultation)

## Gatwick Surface Access Strategy

'Access Gatwick', our Airport Surface Access Strategy published in 2012, sets out a challenging and innovative vision for Gatwick, where the airport continues to act as a transportation hub connecting air to all other transport modes.

At the heart of our surface access strategy for a second runway is our objective to be the best connected and most accessible UK airport. Our objective is for 60% of air passengers to use public transport and 50% of airport staff to travel to work by sustainable modes by 2040.

In preparing our surface access strategy for the second runway we have reviewed the relevant national and local policies and guidance to ensure our proposals meet with their requirements. We have used nationally established assessment tools and data to ensure a sound evidence base for our studies. The proposals for surface access within this consultation document were developed collaboratively through engagement with the appropriate authorities including the Department for Transport, Network Rail, Highways Agency, local business representatives and our Local Highway Authorities.

# Appendix 1: Policy and context

## Potential blight

The 2003 White Paper stated that Gatwick should put in place a scheme to address the problem of generalised blight resulting from the runway safeguarding. Following a period of consultation, Gatwick announced two schemes in July 2005:

- **A Property Market Support Bond**, applicable to residential, agricultural and small commercial properties situated within the safeguarded area, guaranteeing that if we announce our intention to apply for consent to build a second runway, we will, subject to various qualifying criteria, buy the property at a price index linked to June 2002 property prices.
- **A Home Owner Support Scheme**, applicable to similar categories of property situated outside the safeguarded area, but falling within a specified noise contour for the new runway. This will allow eligible property owners to require us to purchase their property for its agreed unblighted market value if, and when, having secured development consent, we announce our intention to construct the second runway.

Details of the schemes are available at [www.gatwickairport.com/consultation](http://www.gatwickairport.com/consultation)

## Decade of Change

We are committed to operating and developing Gatwick in a sustainable way, through responsible environmental management coupled with strong economic and community programmes. We have created a 10 point sustainability plan. We have highlighted 10 key issues and given ourselves 10 years to improve our performance in each of them. We call this our Decade of Change.

## By 2020 we commit to:

- Demonstrate that we are a trusted and valued neighbour by making a positive contribution to Gatwick's local community
- Fulfil our role as an economic driver of local, regional and national significance
- Increase sustainable access options for our passengers and staff
- Reduce carbon emissions by 50% against a 1990 baseline
- Work with airlines and partners to improve air quality
- Reduce the impact of operational noise
- Generate no waste to landfill and recycle 70% of Gatwick waste
- Reduce energy (against a 1990 baseline) and water consumption (against a 2010 baseline) by 20%
- Improve the quality of water leaving the airport
- Have an award winning approach to on-airport biodiversity

While construction and operation of a second runway would take place beyond our Decade of Change, our commitment to responsible, sustainable operations will not end. Our second runway proposals have been developed in line with our Decade of Change priorities, and with the aim of identifying the most sustainable second runway option that we can.

Our approach to sustainability incorporates the obligations and commitments we signed up to in the 2008 Section 106 Legal Agreement which we developed in partnership with West Sussex County Council and Crawley Borough Council. This approach enables us to enhance the sustainability of operations at Gatwick whilst continuing to meet our legal obligations in line with the 2008 agreement.

We report annually on our progress against these objectives. Full details of the Decade of Change commitments and our annual progress reports are available on our website at [www.gatwickairport.com/consultation](http://www.gatwickairport.com/consultation)

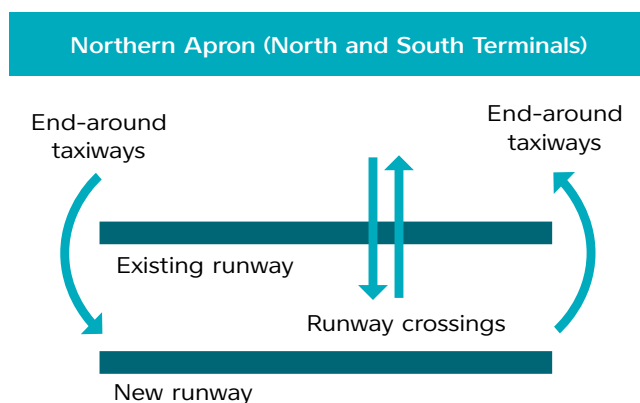
# Appendix 2: Runway crossings

This appendix explains how end-around taxiways could be included in the options and how the options would change as a result.

In Section 2 we explain that some aircraft would need to taxi between the new runway and the northern apron and this might require them to taxi across the existing runway. In this appendix we provide more information about runway crossings and present an alternative solution based on 'end-around taxiways' (EATs)

As shown in Figure A, end-around taxiways provide taxiing routes which pass around the ends of the runways, avoiding the need for aircraft to cross the runway.

**FIGURE A: AIRCRAFT ACCESS ALTERNATIVES BETWEEN NEW RUNWAY AND NORTHERN APRON**



## RUNWAY CROSSINGS

A runway crossing is where an aircraft taxis across an active runway to get from one side to the other. Runway crossings are a common feature of airports worldwide. Major airports both in the UK and overseas rely very heavily on runway crossings (e.g. Manchester, Paris Charles de Gaulle and Los Angeles International) and at these airports a large proportion of aircraft taxi across a runway.

At Gatwick, owing to the airport configuration, runway crossings are currently limited to aircraft being towed to or from the British Airways maintenance hangar to the south of the runway.

In order to cross a runway, a gap is needed between movements on the runway. This gap must be long enough to enable the taxiing aircraft to safely cross the runway. Sometimes these gaps may occur naturally depending on the frequency of movements on the runway. However at busy times it is sometimes necessary to create the gaps by extending the time or distance separations between aircraft using the runway. In these situations runway capacity can be reduced as a result.

The need for runway crossings in our options is explained below.

### Option 1

For this option every arriving flight would need to cross the existing runway (which will be used for departures). However we don't think there will be any significant impact on capacity or delay because of the reduced runway movement rate in this option resulting from the dependent operations.

### Option 2

For this option, approximately half the arriving flights or half the departing flights (depending on which runway is being used for departures at the time) will have to cross the existing runway. As the runways are independent they will have a higher movement capacity and therefore crossings will be less straightforward

# Appendix 2: Runway crossings

than in Option 1. At peak times, the utilisation of the existing runway may need to be reduced by approximately 5 movements per hour. This will ensure that crossing aircraft are delayed by no more than a few minutes. We believe this capacity reduction is similar to that experienced at other airports where runway crossings take place.

## Option 3

For this option the number of runway crossings required will depend on how the traffic is allocated to the two runways. If most flights using the northern apron are allocated to the existing runway, the number of crossings will be small.

In the worst case, where arriving and departing traffic for each apron is distributed evenly between both runways, approximately one quarter of departures and one quarter of arrivals will need to cross the existing runway. As with Option 2 this could result in a small reduction in runway capacity during the peak hours.

## Guidance on runway crossings

While many thousands of runway crossings take place every day worldwide without incident, there has been a recent trend in airport design to reduce or eliminate crossings by providing end-around taxiways. One of the reasons for this is concern about runway incursions (where an aircraft enters an active runway without clearance).

Runway incursions are rare, but industry working groups have been exploring ways to minimise the risks of them happening. This has resulted in written guidance acknowledging that runway crossings can contribute to the risk of incursions and recommending that crossings are avoided by, for example, providing end-around taxiways.

However this is an evolving field where technology is being developed that could offer other, robust means of managing the risk of incursions. Improved signage and

lighting can alert pilots to the presence of an active runway and new technologies allow the automatic monitoring of aircraft on the ground, warning pilots and controllers before a runway incursion could take place.

If a second runway at Gatwick generates a need for runway crossings then we will review and select the appropriate technologies and procedures to provide a safe operation. Nevertheless there remains the issue of how runway crossings may affect the runway capacity and cause delays. As a result we have developed an alternative proposal which is described below.

## END-AROUND TAXIWAYS (EATS)

End-around taxiways provide a taxiing route around the end of the runway, reducing, or eliminating, the need for runway crossings. By reducing the need for crossings EATs have the following potential benefits:

- Reduce the risk of runway incursions;
- Reduce the risk of runway capacity reduction;
- Reduce aircraft holding delays;
- Provide more predictability and resilience to the operation.

We have therefore considered how EATs might be included in our options. Having reviewed various concepts we have settled on a preferred design where the EATs are only used by aircraft taxiing beneath arriving aircraft. Combined with an inset landing threshold, this allows the EATs to be located close to the runway ends and keeps the airfield within the safeguarded boundary.

The concept is illustrated in Figure B. This shows EATs at both ends of the runway but, at any one time, only the EAT beneath the arriving flights would be in use. When the runway operation is reversed, owing to a change in wind direction, the other EAT would be brought into use.

# Appendix 2: Runway crossings

In order to maintain an adequate landing distance and make space for the EATs, the western end of the existing runway would need to be extended by around 100m.

**FIGURE B: END AROUND TAXIWAYS (EATs).**



We have applied this configuration of EATs to our three options.

We show here how each option would look with these EATs included. There is a small increase in land-take around the western boundary of the airport which is discussed further in the following sections which describe environmental effects. The operational airport boundary can still be accommodated within the safeguarded land. However, slightly more of the river diversion falls outside this safeguarded area than is the case without EATs.



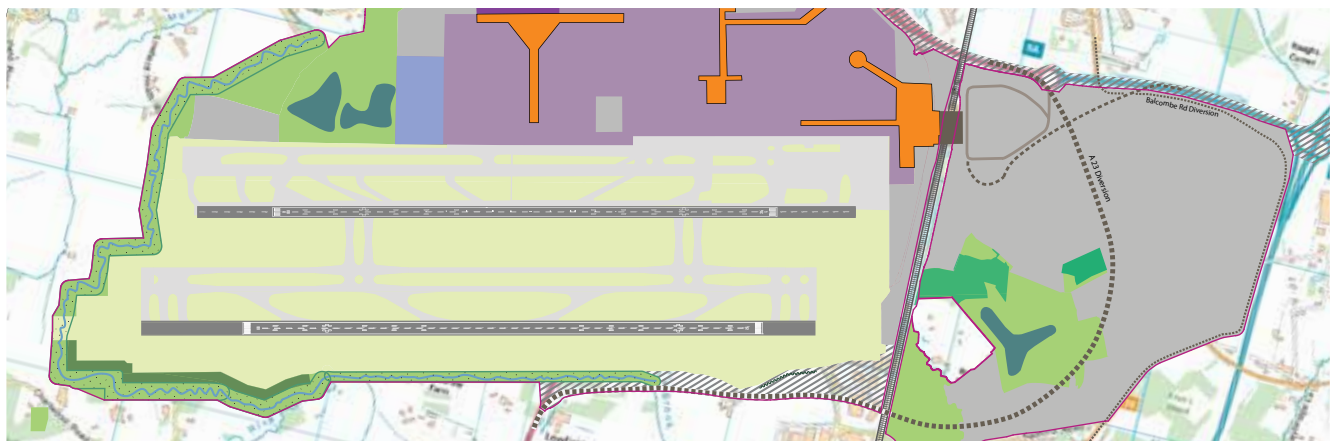
# Appendix 2: Runway crossings

## Option 1 with EATs

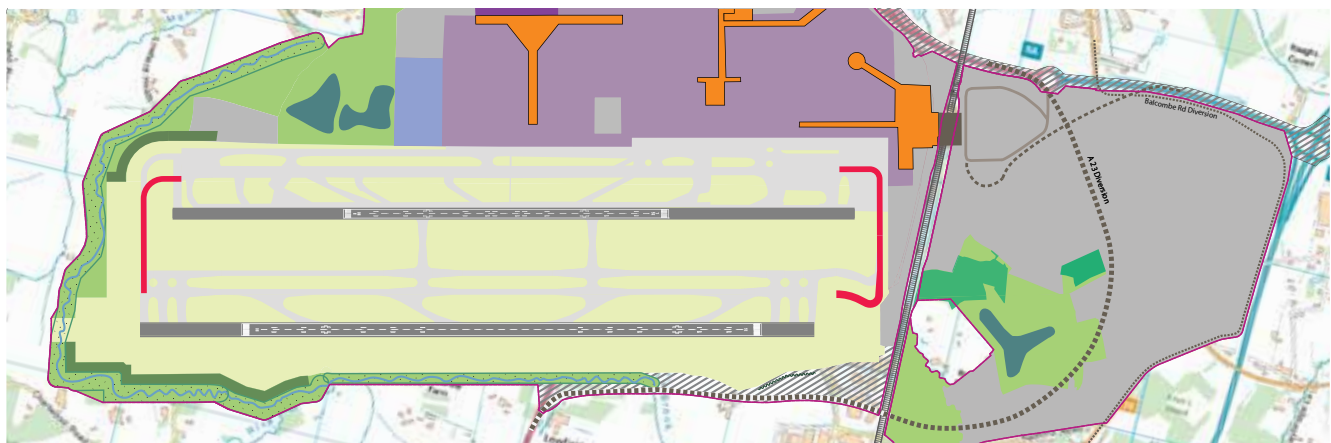
Figure C below shows a comparison between Option 1 with and without EATs. (EATs are shown in red).

In this option the EATs eliminate runway crossings assuming that the new runway is used for departures and the existing runway is used for arrivals, reversing the runway use assumed for Option 1 without EATs.

Option 1 Without EATs



Option 1 With EATs



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## Legend

Airfield	Landscape Areas	Train Station
Aprons	Ancient Woodland	River Diversion
Runways	Ancillary and Surface Transport Facilities including parking	Acoustic Bund
Taxiways	Existing Airport Roads	Balancing Pond
Cargo	Proposed Road Network	Proposed Noise Wall
Maintenance	Road improvements Corridor	Airport Boundary Opt 1
Terminal Building		Opt 1 End Around Taxiways

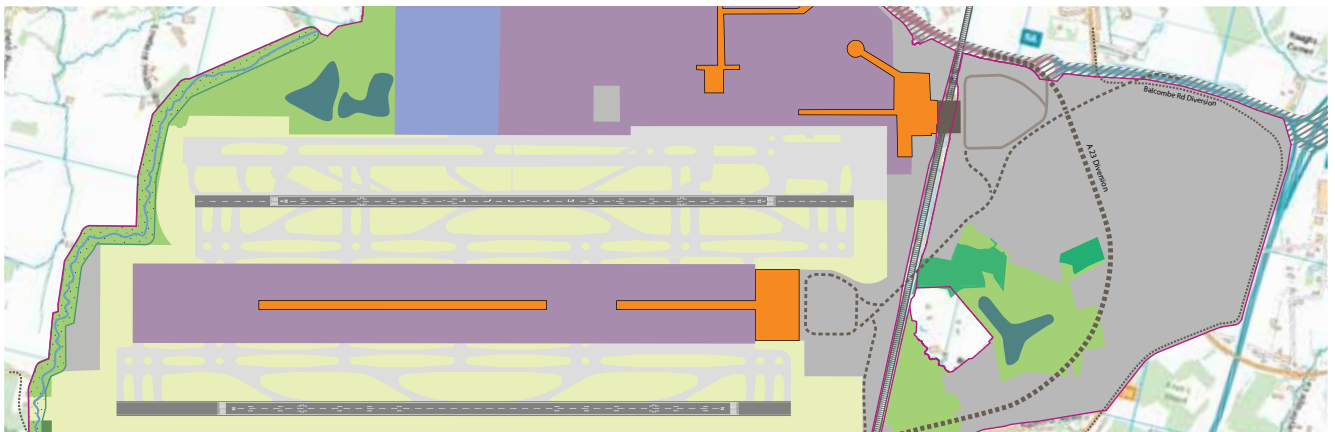
# Appendix 2: Runway crossings

## Option 2 with EATs

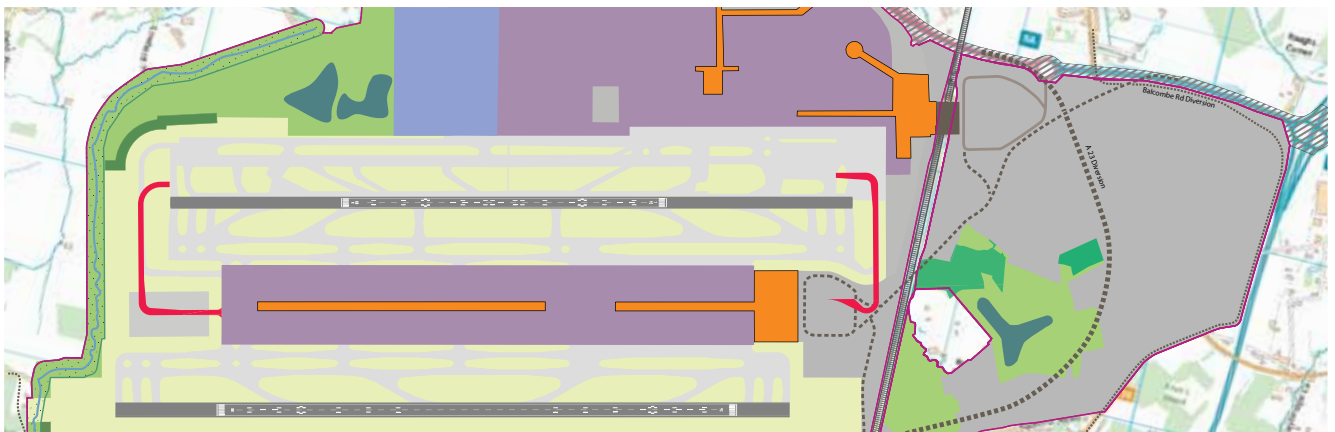
Figure D below shows a comparison between Option 2 with and without EATs. (EATs are shown in red).

In this option the EATs eliminate runway crossings when the new runway is being used for departures for the same reasons as explained for Option 1. However, as runway alternation is proposed for Option 2, the new runway will be used for arrivals for half the time. In these circumstances arriving flights going to the northern apron will have to cross the existing runway and a small loss of capacity may be experienced at peak times.

Option 2 Without EATs



Option 2 With EATs



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## Legend

Airfield	Landscape Areas	Train Station
Aprons	Ancient Woodland	River Diversion
Runways	Ancillary and Surface Transport Facilities including parking	Acoustic Bund
Taxiways	Existing Airport Roads	Balancing Pond
Cargo	Proposed Road Network	Proposed Noise Wall
Maintenance	Road improvements Corridor	Airport Boundary Opt 2
Terminal Building		Opt 2 End Around Taxiways

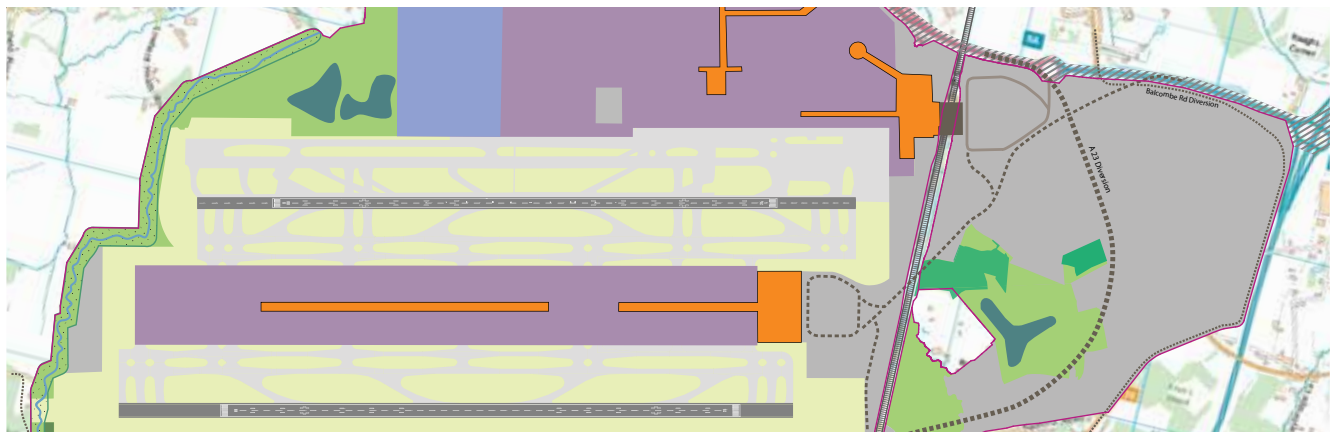
# Appendix 2: Runway crossings

## Option 3 with EATs

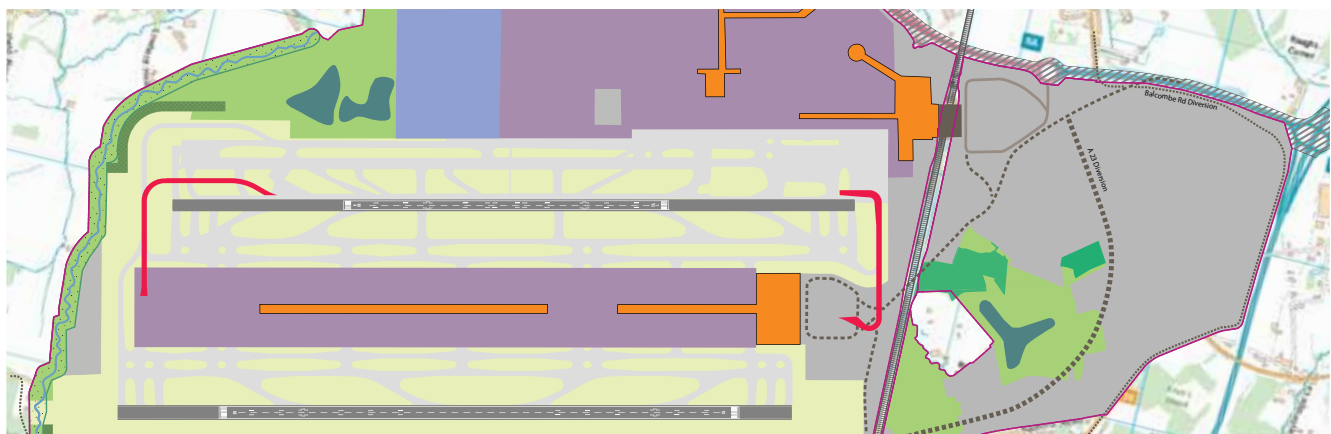
Figure E below shows a comparison between Option 3 with and without EATs. (EATs are shown in red).

In this option the EATs eliminate runway crossings if all arriving flights going to the northern apron land on the existing runway. Where this is not possible, and some northern apron arriving flights have to land on the new runway, these would have to taxi across the existing runway and a small loss of capacity may be experienced at peak times.

Option 3 Without EATs



Option 3 With EATs



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## Legend

Airfield	Landscape Areas	Train Station
Aprons	Ancient Woodland	River Diversion
Runways	Ancillary and Surface Transport Facilities including parking	Acoustic Bund
Taxiways	Existing Airport Roads	Balancing Pond
Cargo	Proposed Road Network	Proposed Noise Wall
Maintenance	Road improvements Corridor	Airport Boundary Opt 3
Terminal Building		Opt 3 End Around Taxiways

# Appendix 2: Runway crossings

## HOW END-AROUND TAXIWAYS CHANGE THE PERFORMANCE OF THE OPTIONS

In Section 3 we described our appraisal of the three runway options (without EATs). By including EATs the performance of the options changes as described below.

### Environmental

The provision of end-around taxiways would require approximately 20ha additional land in each of the three options. The land which would be affected is agricultural in nature.

The relative environmental performance of Options 1, 2 and 3 does not change with the provision of EATs although there are some small changes in the key environmental indicators. These are mainly associated with land take, ground noise at the western end of the existing runway, and minor changes to the air noise contours.

No additional residential properties, businesses or community amenities are otherwise lost by the provision of EATs.

At the western end of the existing runway we would provide an acoustic bund to reduce the potential increases in noise and visual impacts of aircraft using the end-around taxiway. This would run along the new north-west boundary of the airport and would feature a vertical retaining wall on the airfield side of the bund and a landscaped slope on the other side, dropping down to the re-aligned River Mole.

As in the non-EATS Options, the River Mole corridor would form the outer boundary of the airport on its west side. For each of the three options, the length of the river corridor would marginally increase as a result. EATs do not result in increased development in the floodplain or increase the requirement for flood storage within the airport boundary.

The provision of EATs does not result in increased loss of ancient woodland or require further land take from any designated Site of Nature Conservation Interest. There would be no changes to the numbers of listed buildings as a result of providing EATs; however, there are potentially increased effects to archaeological resources in the areas concerned.

EATs do result in greater loss of land from the Greenbelt, and take land from the Northern Vales and Open Weald Landscape Character Areas (LCA). EATs will result in an additional loss of up to 0.5km of Public Footpaths but there are no additional impacts on Public Bridleways. The tables below summarise effects to Greenbelt, LCAs and Public Rights of Way across the three options.

## Appendix 2: Runway crossings

Table A Land use	Option 1			Option 2			Option 3		
	No EATs	With EATs	Change	No EATs	With EATs	Change	No EATs	With EATs	Change
Land take (ha)	388	408	20	573	593	20	577	597	20
Green Belt Land taken (ha)	4.7	9.1	4.4	4.7	9.1	4.4	4.7	9.1	4.4

Table B Effects to Landscape Character Areas	Option 1			Option 2			Option 3		
	No EATs	With EATs	Change	No EATs	With EATs	Change	No EATs	With EATs	Change
Crawley (ha)	17.1	17.1	0	39.4	39.4	0	39.4	39.4	0
Northern Vales (ha)	377.2	393.4	16.2	536.2	552.2	16	542.4	558.9	16.5
Open Weald (ha)	5.5	9.9	4.4	5.5	9.9	4.4	5.5	9.9	4.4

The provision of EATs does result in some small changes to the air noise contours as shown in Table C below. This is owing to adjustment in the landing threshold and runway end positions.

Table C 57dB LAeq,16hr noise contours	Population in contour ('000) (no EATs)	Population in contour ('000) (with EATs)	Contour area (km <sup>2</sup> ) (no EATs)	Contour area (km <sup>2</sup> ) (with EATs)
Option 1 (2040)	2.7	5.6	46.6	46.0
Option 2 (2040)	10.8	10.8	61.0	60.9
Option 3 (2040)	14.4	14.5	64.7	64.6

This shows that the differences in terms of air noise are very small and consequently the relative performance of the options in terms of air noise is considered unchanged when EATs are included.



# Appendix 2: Runway crossings

## Ground noise

For Ground Noise effects the provision of the EATs in the options would make little, if any, difference to levels of ground noise in most of the communities close to the airport including Horley, Povey Cross and the northern parts of Crawley. The provision of an EAT at the western end of the existing runway would however, increase aircraft taxiing noise in the southern parts of Charlwood and along Ifield Road due to the closer proximity of the EAT to these areas. To reduce this impact a noise bund is proposed in all options around the north-west boundary.

## Operational Viability

The operational benefits of the proposed EATs do vary by option as explained below.

For Option 1 the EATs remove entirely the need for runway crossings. This is unlikely to affect the capacity of this option but will bring benefits by reducing the risk of runway incursions and reduce holding delays.

For Option 2 some runway crossings will be required even with the EAT solution proposed. Therefore there would still be the possibility of a small reduction in capacity at peak times and some crossing delays will be experienced.

For Option 3 the provision of EATs removes the need for departing aircraft to cross a runway but some crossings by arriving aircraft may still be necessary depending on method of runway allocation to arriving flights.

Therefore, in terms of operational viability, we believe that Option 1 benefits most from EATs, closely followed by Option 3. Option 2 benefits from EATs but not as much as the other two options.

## Summary

In summary the inclusion of EATs can bring operational benefits to all three options (although Options 1 and 3 benefit most) with 20ha of additional land take and some changes in air and ground noise impacts.

Following this consultation, and as our plans develop, we will decide whether the inclusion of EATs is appropriate for our preferred option. If EATs are included in the option it may not be necessary to construct these at the out-set. They could be added later as traffic volumes resulting from the second runway increase.



# Plans

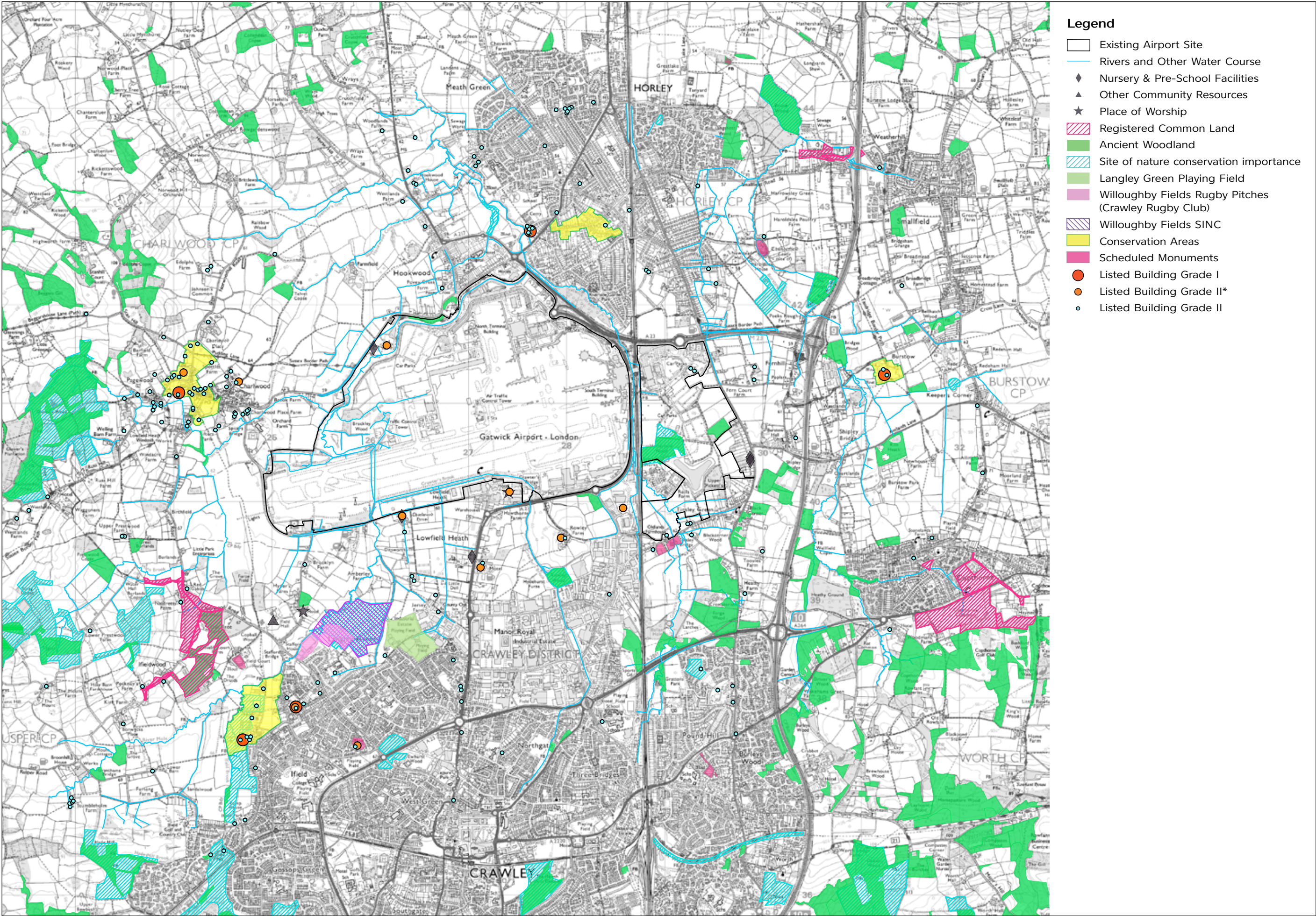


Plan 0A:

Context plan - environmental features



# Plan 0A: Context plan - environmental features



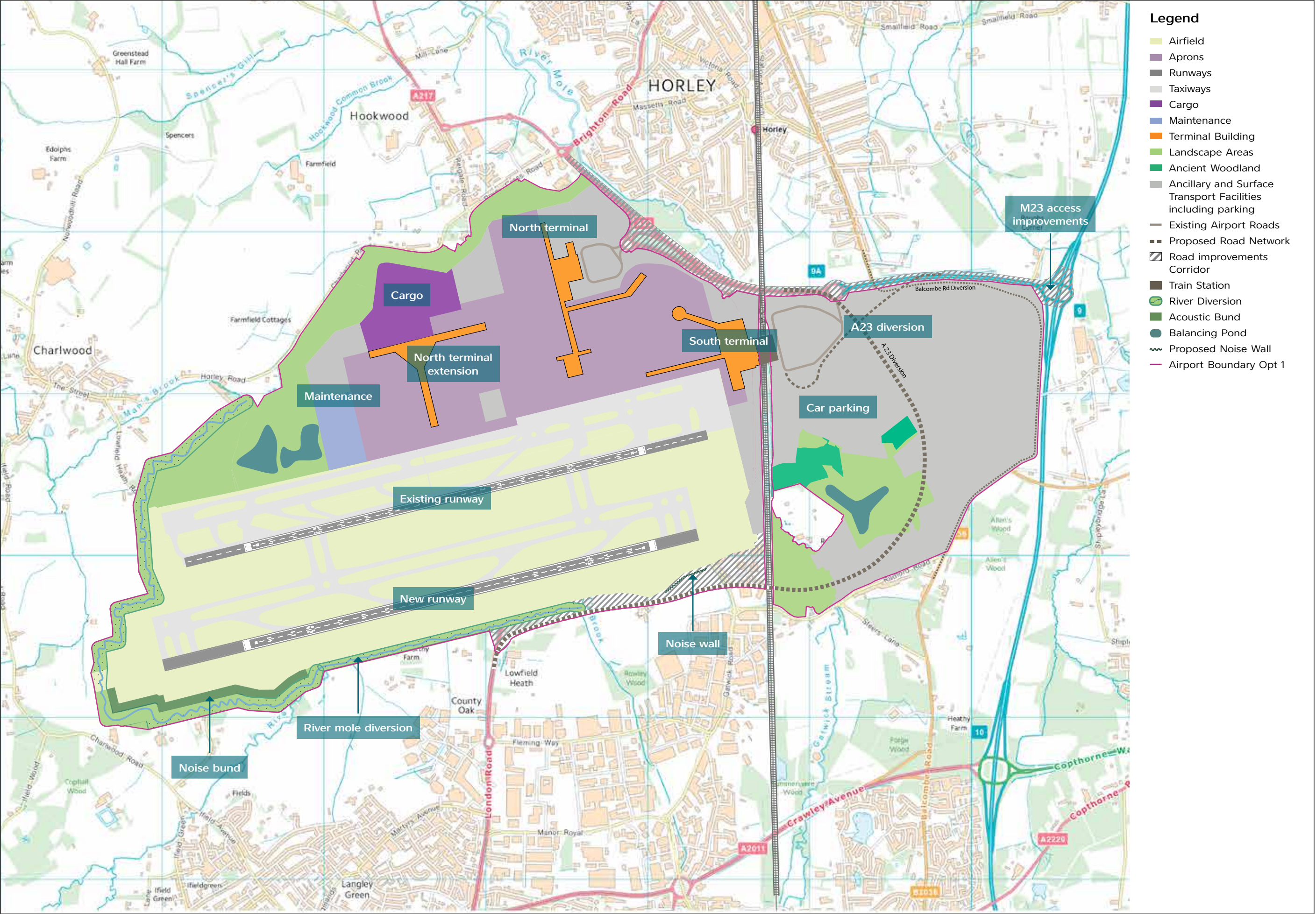
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# Plan 1A:

## Option 1 Layout plan



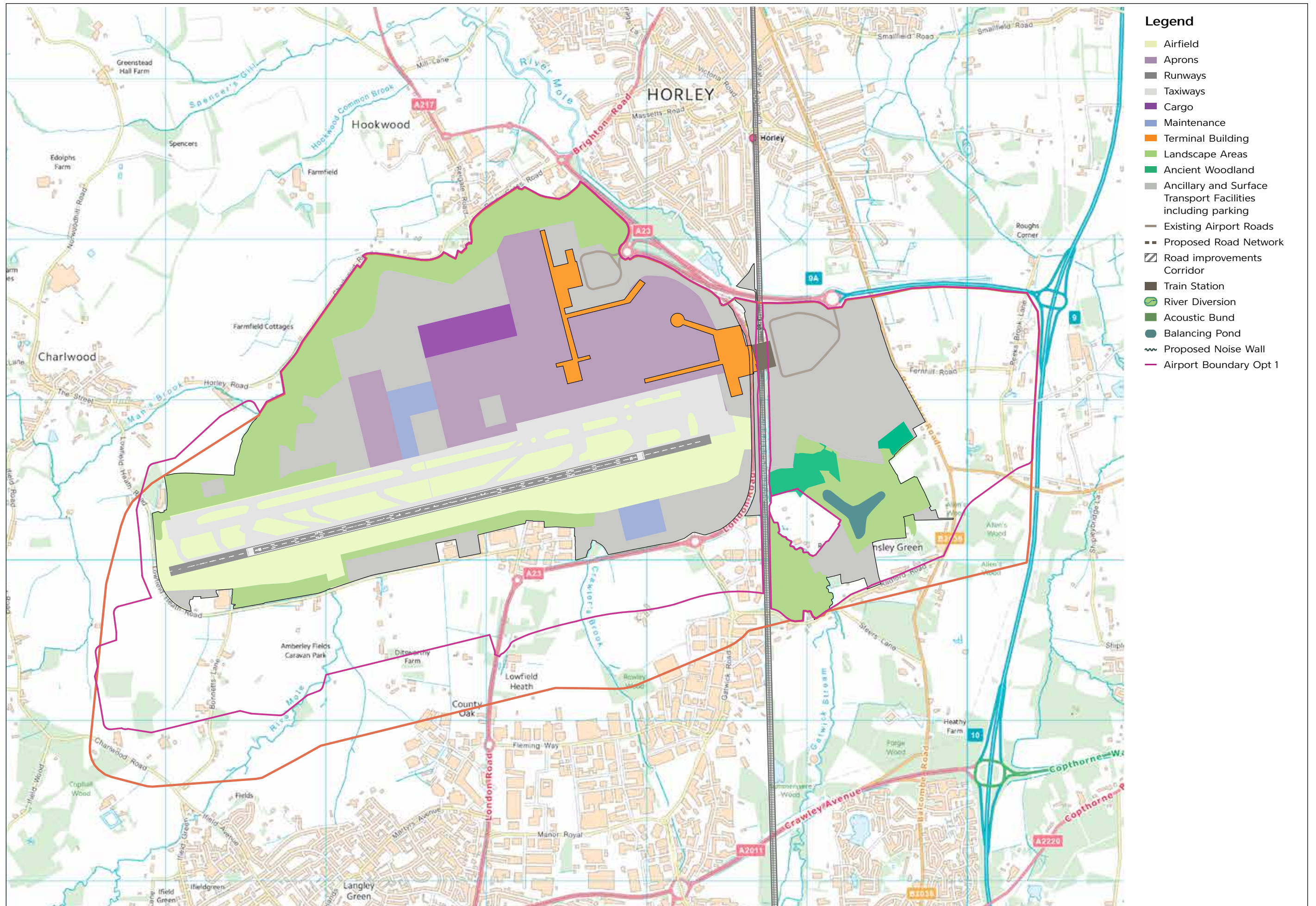


# Plan 1B:

## Option 1 Boundary plan



# Plan 1B: Option 1 Boundary plan

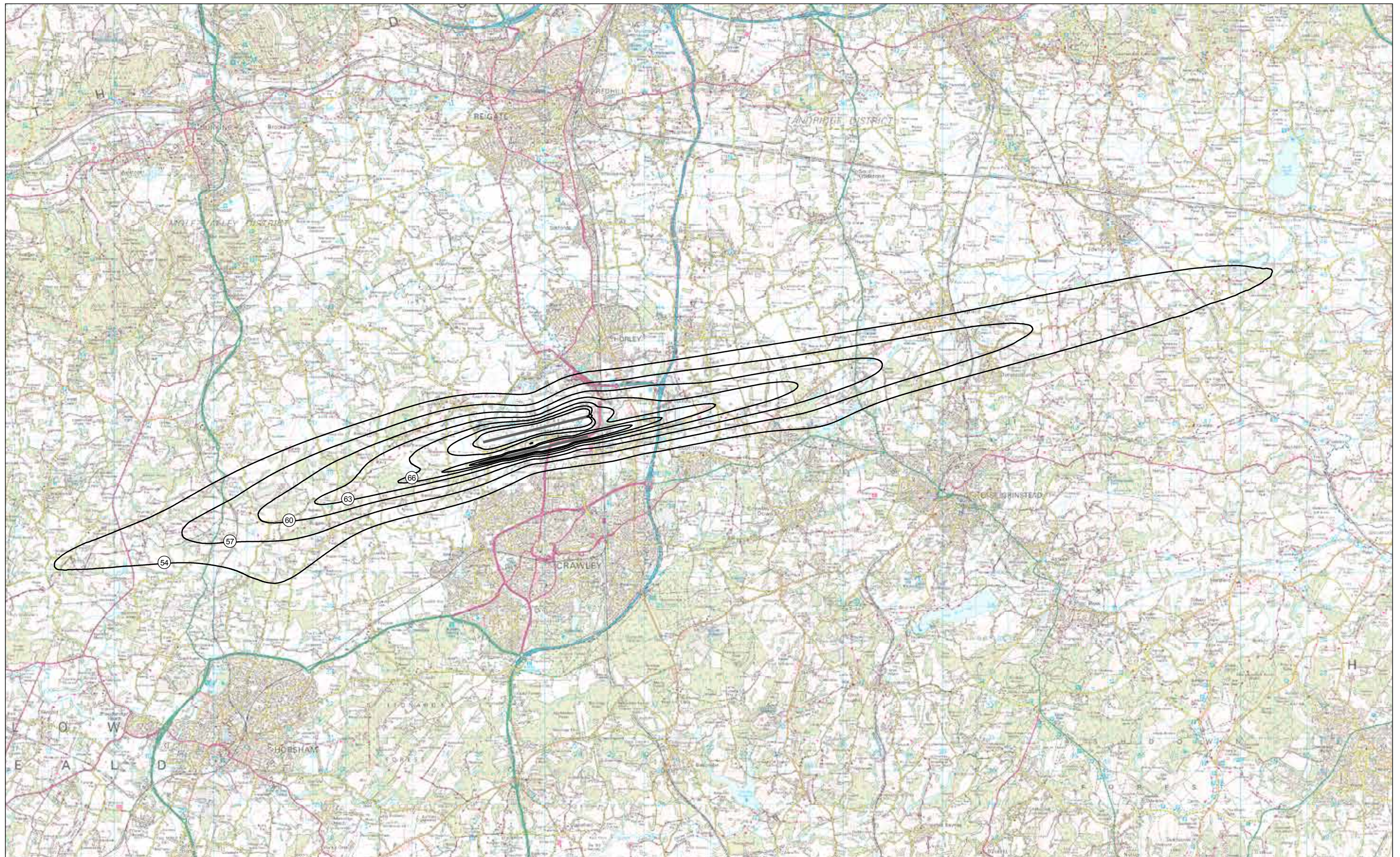




Plan 1C:

Option 1 Air Noise Contour plan





# **GATWICK AIRPORT**

**R2 Option 1 (Close Spaced Segregated Mode) No EATs 2040  $L_{eq}$  54-72 dB(A) Contours**

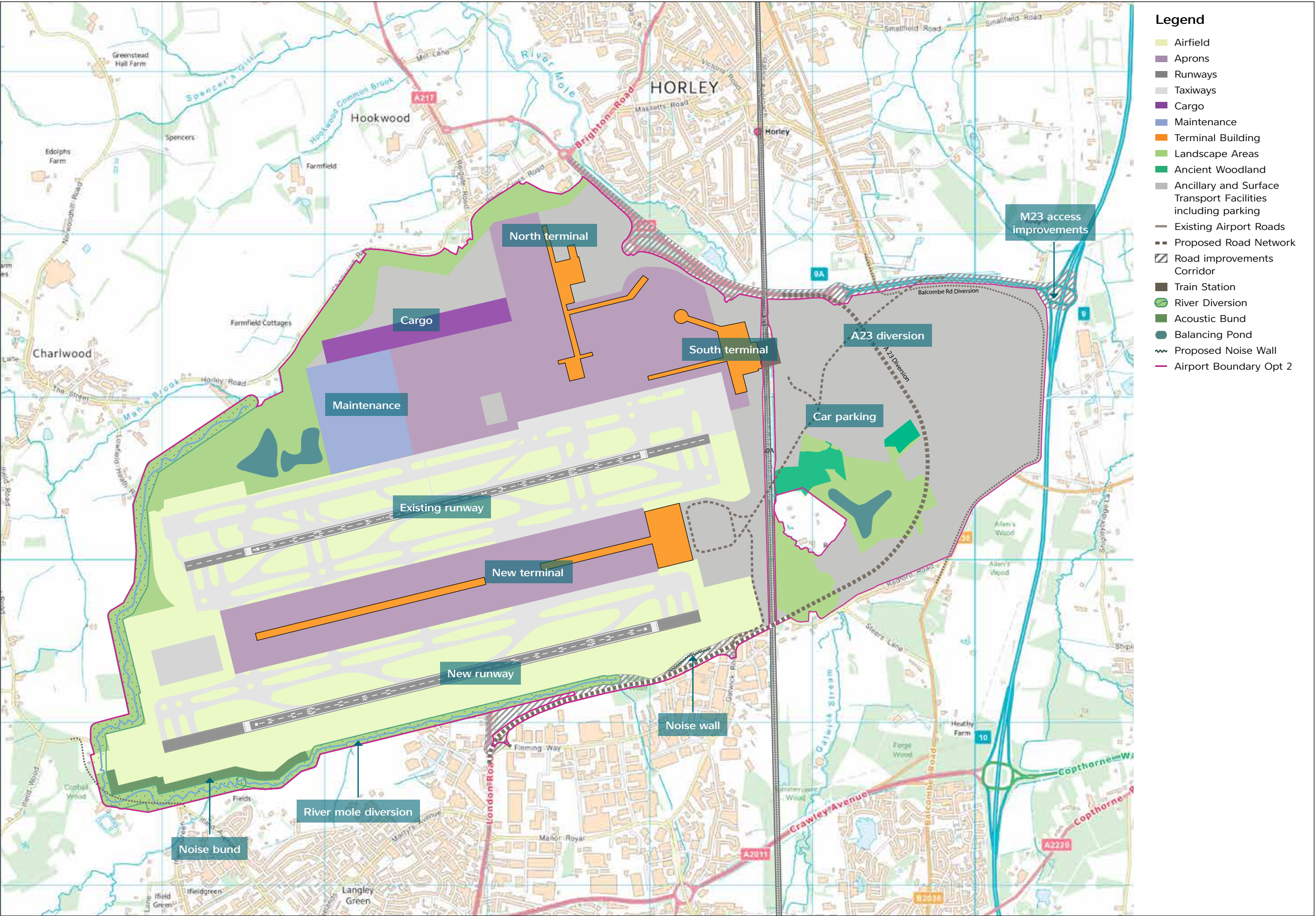
Modal split 74% west / 26% east

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# Plan 2A:

## Option 2 Layout plan

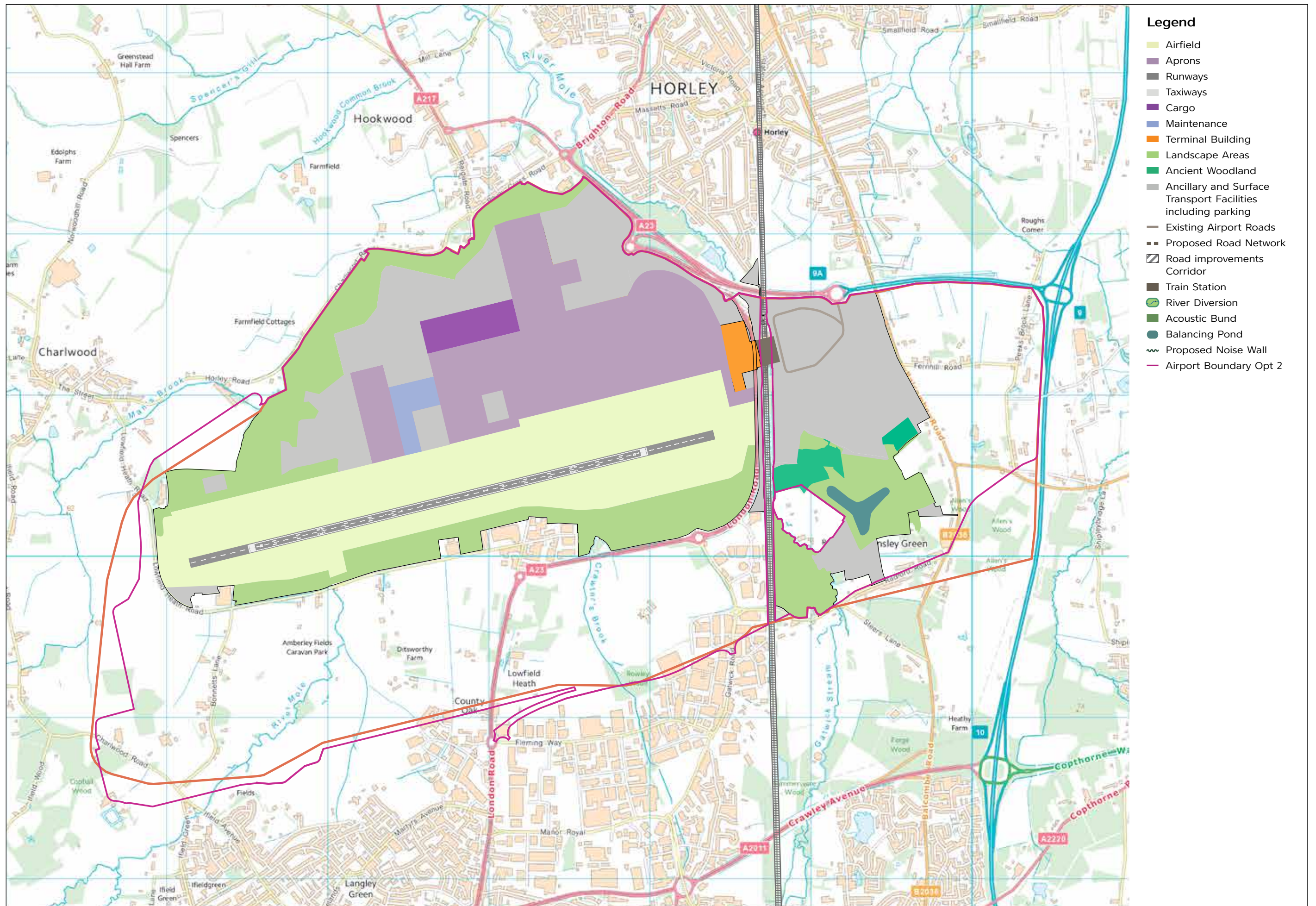




# Plan 2B:

## Option 2 Boundary plan

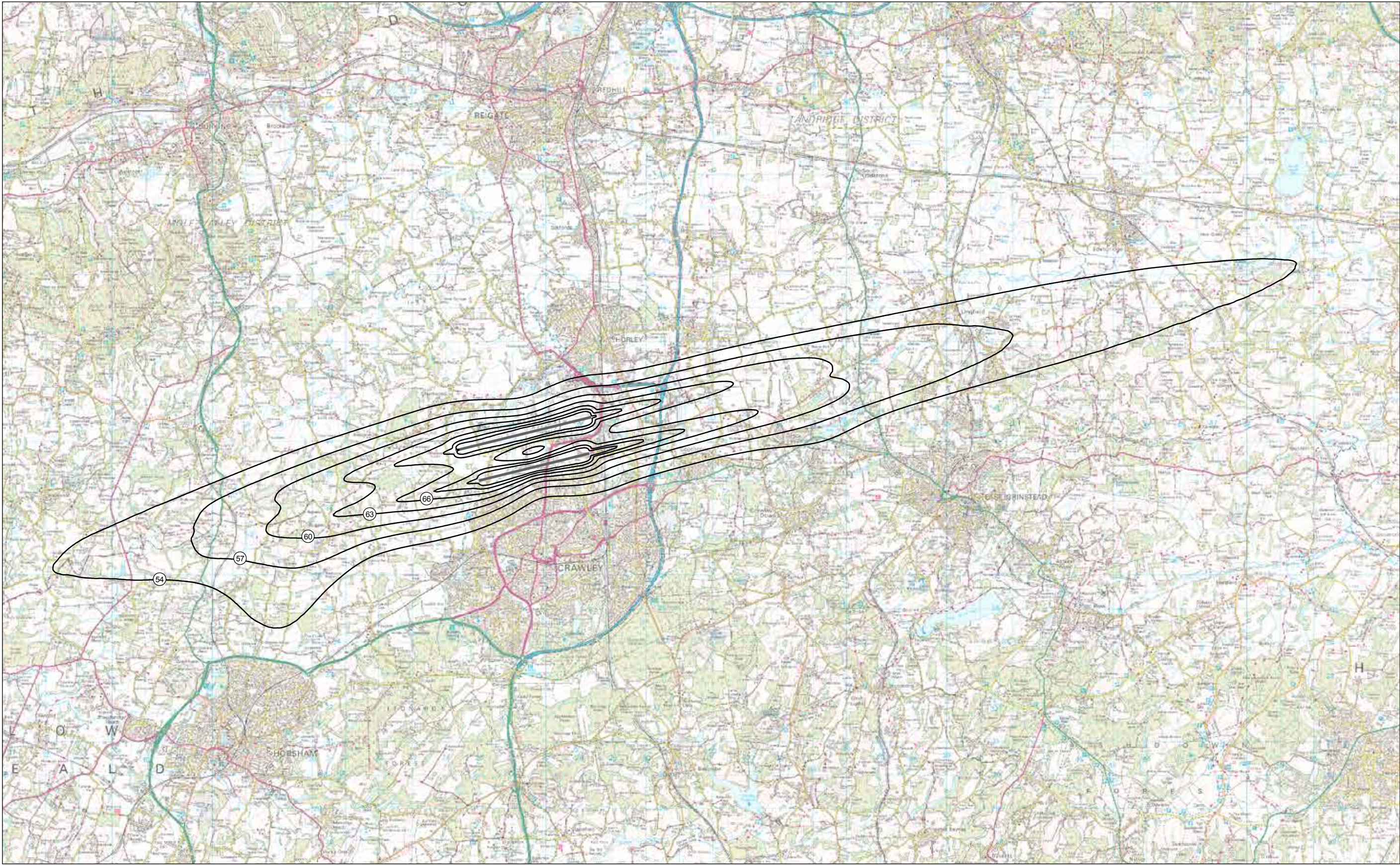
## Plan 2B: Option 2 Boundary plan



Plan 2C:

Option 2 Air Noise Contour plan





**GATWICK AIRPORT**  
R2 Option 2 (Wide Spaced Segregated Mode) No EATs 2040  $L_{eq}$  54-72 dB(A) Contours  
Modal split 74% west / 26% east

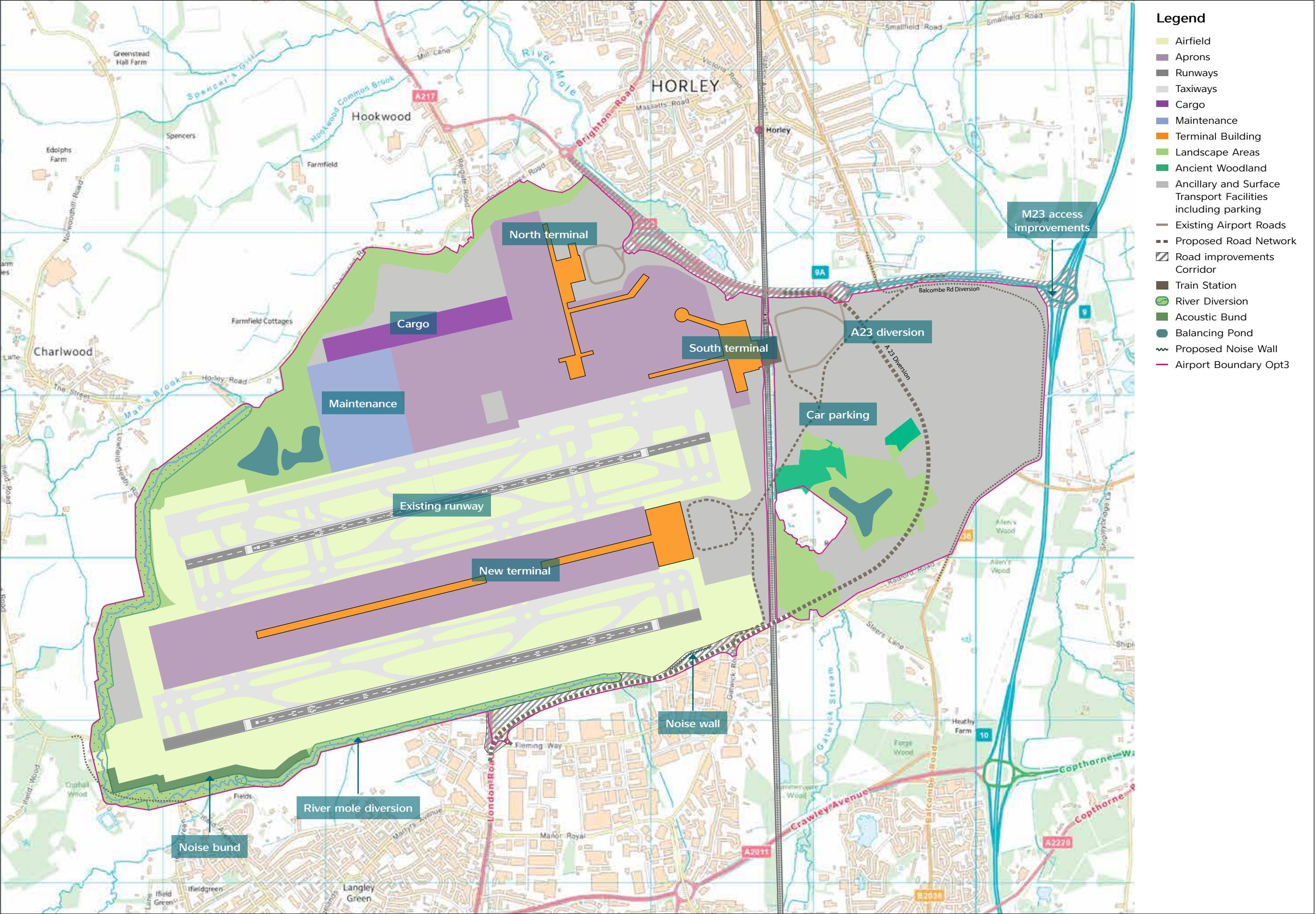
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# Plan 3A:

## Option 3 Layout plan

Plan 3A: Option 3 Layout plan

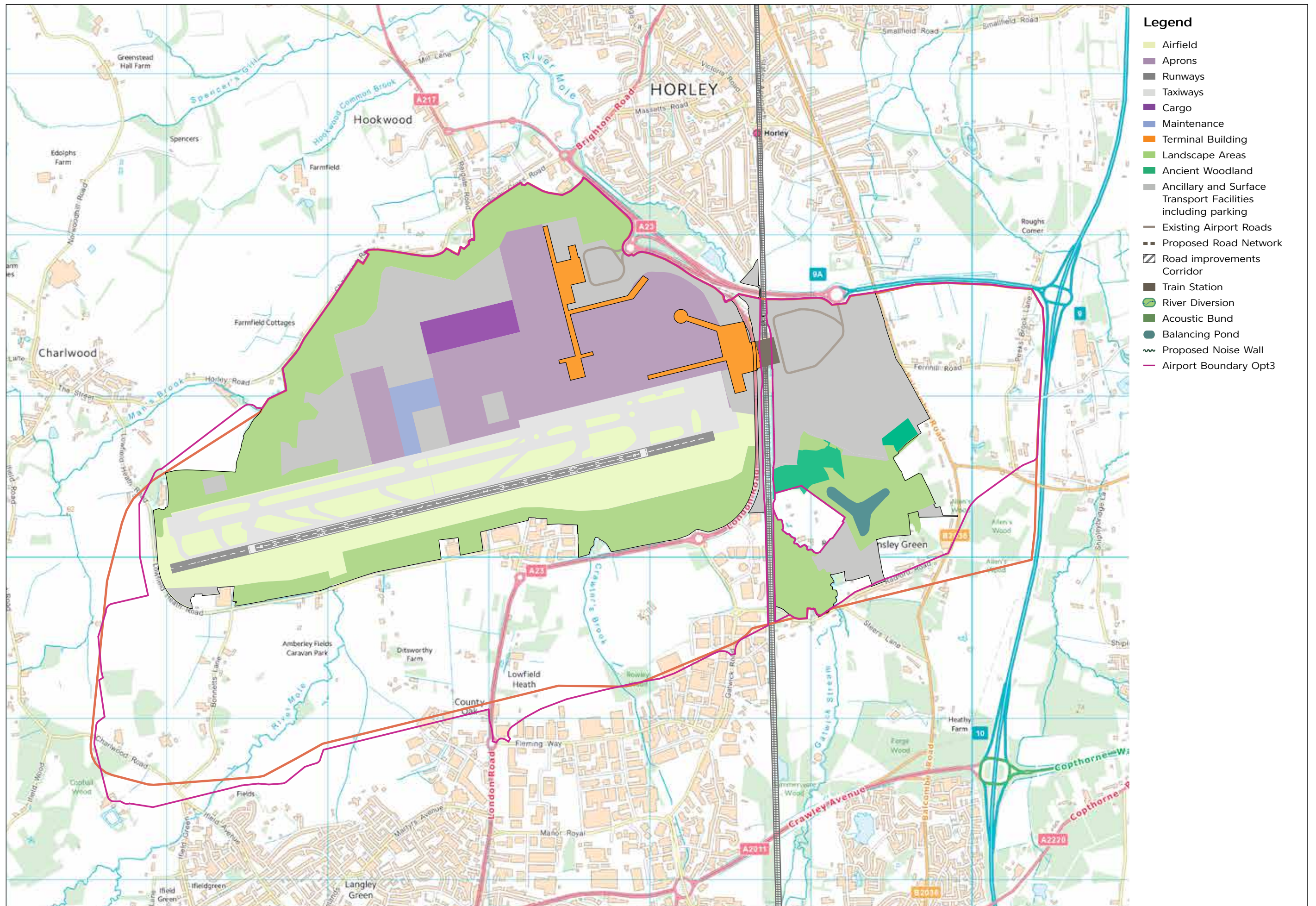


# Plan 3B:

## Option 3 Boundary plan



## Plan 3B: Option 3 Boundary plan

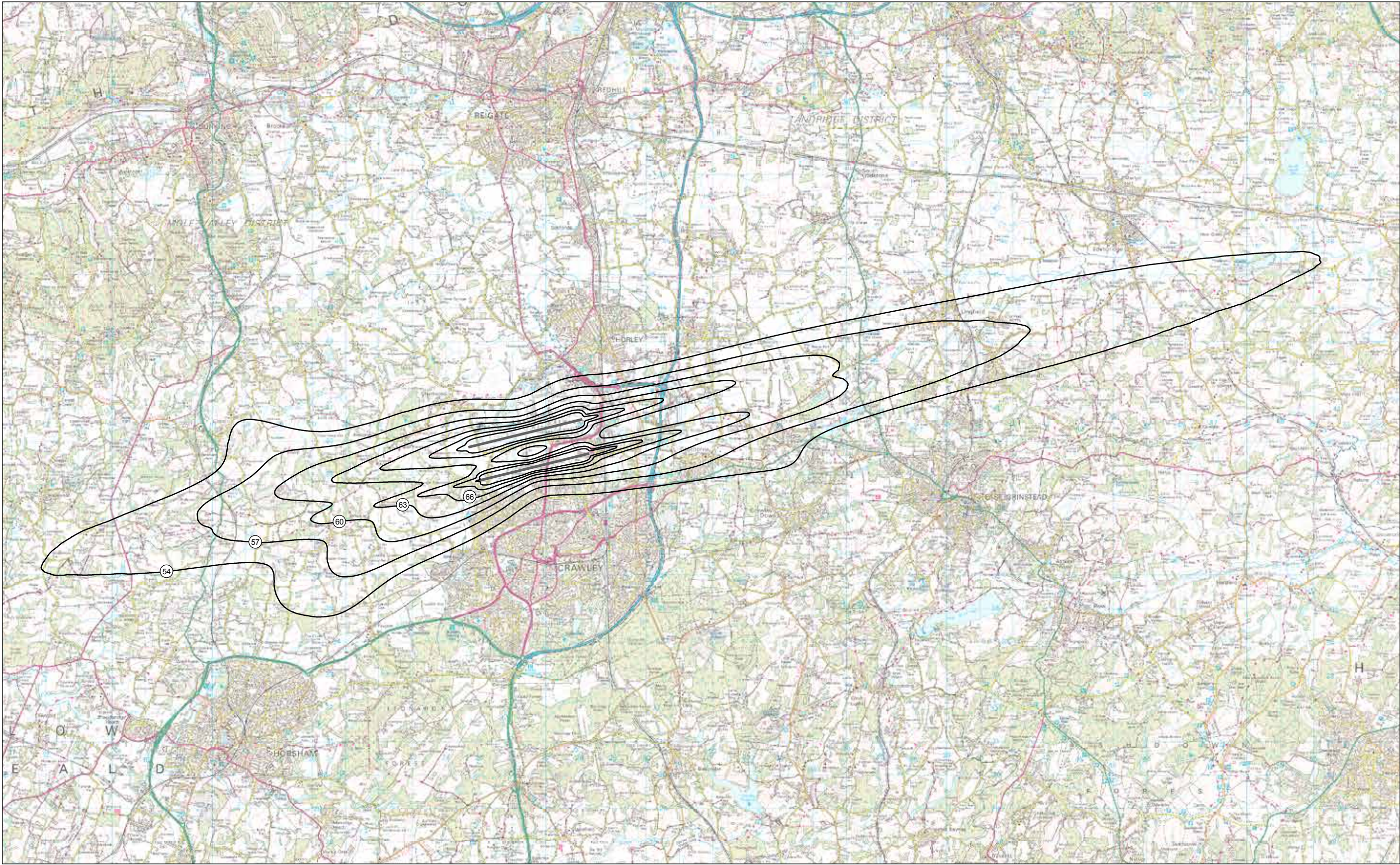




Plan 3C:

Option 3 Air Noise Contour plan





**GATWICK AIRPORT**  
**R2 Option 3 (Wide Spaced Mixed Mode) No EATs 2040  $L_{eq}$  54-72 dB(A) Contours**  
Modal split 74% west / 26% east

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