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**7.07 Green Controlled Growth Explanatory Note (Tracked
Change Version)**

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**7.07 GREEN CONTROLLED GROWTH EXPLANATORY NOTE
(TRACKED CHANGE VERSION)**

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EXECUTIVE SUMMARY

Green Controlled Growth

Airports do much that is good. They are gateways to the world for business and leisure. They are very important economic hubs. They can generate tens of thousands of jobs.

Airports can also generate negative environmental effects that, unless controlled and managed, can impact on surrounding communities.

Luton Rising (a trading name of London Luton Airport Limited) is a business and social enterprise owned by a sole shareholder, Luton Borough Council, for community benefit, and is at the heart of a movement for positive change in the Luton community. Green Controlled Growth (or GCG) is a key value of Luton Rising in its ambition to enable the sustainable expansion of Luton Airport, in alignment with the Government's Jet Zero Strategy. Luton Rising has developed a unique Green Controlled Growth (GCG) Framework to make sure that airport growth takes place within environmental Limits. Crucially, these Limits are not vague aspirations – they will be secured through the legally binding GCG Framework, and overseen by an independent body called the Environmental Scrutiny Group (ESG).

The GCG Framework will be secured through the Development Consent Order (DCO), with specific requirements set out in the Order relating to the implementation of GCG. This document is the **Green Controlled Growth (GCG) Explanatory Note [TR020001/APP.7.07]**, which sets out how and why the GCG Framework has been developed, and how it will work in future.

How will Green Controlled Growth work?

Green Controlled Growth will place controls on four key categories of environmental effect: air quality, greenhouse gas emissions, aircraft noise, and surface access. These topics have been selected as the areas where environmental effects will continue to change over time, as passenger numbers grow and technology improves.

Limits that are not to be exceeded have been defined, based on the following environmental effects:

- a. Aircraft noise – by the total area of land experiencing noise above a certain threshold;
- b. Air quality – by the concentrations in the air of the pollutants most relevant to human health;
- c. Greenhouse gas emissions – by emissions from airport operations and surface access; and
- d. Surface access – by percentage of passengers and staff travelling by unsustainable modes of transport.

The GCG Framework sets out the numerical values for these Limits, how they've been developed, and two threshold levels that are lower than the Limits themselves. The thresholds provide an early warning of any potential increase in environmental effects, with the aim of ensuring that these Limits are not breached.

The airport operator will be required to continually monitor and periodically report on the extent of the environmental effects associated with the airport in the four areas.

Luton Rising, as the Applicant, will not be marking its own homework – there will be a new, independent, body called the Environmental Scrutiny Group (ESG) to oversee Green Controlled Growth and make sure that it works in practice. The ESG is proposed to include independent members, and representatives from Luton Borough Council and neighbouring councils. The ESG will be supported by four Technical Panels, one for each of the environmental topics. The Green Controlled Growth process has also been designed to ensure that community views are taken into account.

If monitoring were to indicate at any point that a Limit was in danger of being breached, then plans must be produced by the airport operator to set out how that breach will be avoided, for approval by the ESG. If any one of the environmental Limits were breached (unless for reasons outside the airport operator's control), further growth will be stopped, mitigation will need to be implemented if required, and ultimately, airport capacity would be constrained until environmental performance returned below the Limits.

The key elements of the legally binding GCG Framework are therefore:

- a. Limits on environmental effects in four key areas;
- b. A series of processes to be followed as environmental effects reach Thresholds defined below these Limits;
- c. Ongoing monitoring of the actual environmental effects of expansion and operations at the airport;
- d. Independent oversight of environmental effects associated with the operation of the airport; and
- e. An explicit commitment to link environmental performance to growth at the airport.

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1 INTRODUCTION

1.1 The Proposed Development

- 1.1.1 This document is the Green Controlled Growth (GCG) Explanatory Note, which has been prepared to support the proposed expansion of London Luton Airport ('the Proposed Development'). This application is made by Luton Rising (a trading name of London Luton Airport Limited), owners of London Luton Airport ('the Applicant'). Luton Rising is a business and social enterprise owned by a sole shareholder, Luton Borough Council, for community benefit. Luton Rising is at the heart of a movement for positive change in the Luton community. This document is intended to act as a narrative to explain the GCG approach which forms part of the application for development consent. It sets out the reasons why Luton Rising as the Applicant has developed this approach, how the proposals have been developed and refined based on feedback from stakeholders, and how GCG is proposed to work.
- 1.1.2 It is accompanied by the **Green Controlled Growth (GCG) Framework [TR020001/APP/7.08]**, which sets out the necessary processes and details of Limits and Thresholds that are required for the functioning of the GCG approach.
- 1.1.3 The GCG Framework, along with the Terms of Reference and Monitoring Plans included as appendices to it, will be secured by Schedule 2 and 'certified' by Article 50 and Schedule 9 of the **DCO [TR020001/APP/2.01]**.
- 1.1.4 The Proposed Development builds on the current operational airport with the construction of a new passenger terminal and additional aircraft stands to the north east of the runway.
- 1.1.5 This will take the overall passenger capacity to 32 million passengers per annum (mppa).
- 1.1.6 In addition to the above and to support the initial increase in demand, the existing infrastructure and supporting facilities will be improved in line with the phased incremental growth in capacity of the airport.
- 1.1.7 Key elements of the Proposed Development include:
- a. Extension and remodelling of the existing passenger terminal (Terminal 1) to increase the capacity;
 - b. New passenger terminal building and boarding piers (Terminal 2);
 - c. Earthworks to create an extension to the current airfield platform; the vast majority of material for these earthworks would be generated on site;
 - d. Airside facilities including new taxiways and aprons, together with relocated engine run-up bay and fire training facility;
 - e. Landside facilities, including buildings which support the operational, energy and servicing needs of the airport;
 - f. Enhancement of the existing surface access network, including a new dual carriageway road accessed via a new junction on the existing New Airport

Way (A1081) to the new passenger terminal along with the provision of forecourt and car parking facilities;

- g. Extension of the Luton Direct Air to Rail Transit (Luton DART) with a station serving the new passenger terminal;
- h. Landscape and ecological improvements, including the replacement of existing open space; and
- i. Further infrastructure enhancements and initiatives to support the Applicant's goal of zero emission airport ground operations by 2040¹, with interventions to support carbon neutrality being delivered sooner including facilities for greater public transport usage, improved thermal efficiency, electric vehicle charging, on-site energy generation and storage, new aircraft fuel pipeline connection and storage facilities and sustainable surface and foul water management installations.

1.1.8 A full project description is provided in **Chapter 4 of the Environmental Statement** (the ES) [TR020001/APP/5.01].

1.1.9 The Proposed Development will be delivered in undefined increments that appropriately respond to demand over time. However, for the purposes of assessment, three assessment phases are considered with each phase developed to meet the forecast passenger demand. These phases are as follows:

- a. Assessment Phase 1 – a Core Planning Case of 21.5 mppa by 2027.
- b. Assessment Phase 2a – a Core Planning Case of 27 mppa by 2039 when Terminal 2 opens.
- c. Assessment Phase 2b – a Core Planning Case of 32 mppa by 2043 when Terminal 2 is fully built out.

1.1.10 On 1 December 2021, the local planning authority (Luton Borough Council) resolved to grant permission for the current airport operator (London Luton Airport Operations Limited – 'LLAOL') to grow the airport up to 19 mppa, from its previous permitted cap of 18 mppa. However, the application was subsequently called-in and referred to the Secretary of State for determination instead of being dealt with by the local planning authority and an inquiry to consider the called-in application took place between Tuesday 27 September 2022 until Friday 18 November 2022.

1.1.11 At the time that this application for development consent was submitted, the outcome of the inquiry was unknown and therefore all of the core assessment work to date used a "baseline" of 18 mppa. The application by LLAOL has however since been approved, with a joint decision to grant planning permission issued by the Secretary of State for Transport and Secretary of State for Levelling Up, Housing and Communities on 13 October 2023. In anticipation of this, the Applicant's environmental assessments included sensitivity analysis of the implications of the permitted cap increasing to 19 mppa. As a result, the

¹ This is a Government target, for which the precise definition will be subject to further consultation following the Jet Zero Strategy, and which will require further mitigations beyond those secured under the DCO.

Applicant believes that the environmental assessments are sufficiently representative of the likely significant effects of expansion, whether the baseline is 18 mppa or 19 mppa. Where the change of the baseline does affect an assessment topic, in most cases it means that the 'Core Planning Case' assessments (using an 18 mppa baseline) report a marginally greater change than would be the case with a 19 mppa baseline. The findings of this assessment are presented in the **Environmental Statement [TR020001/APP/5.01]** submitted with the application for development consent.

1.2 The airport's environmental ambitions

- 1.2.1 The airport is an important international transport hub that connects people and businesses across Europe and beyond, and therefore provides a range of socio-economic benefits to Luton, the Three Counties (Bedfordshire, Buckinghamshire and Hertfordshire), as well as the wider region and nationally. While the airport delivers significant socio-economic benefits, it is also recognised that the operation of the airport can result in environmental effects that impact local communities and the wider planet.
- 1.2.2 These have long been a matter of great importance to Luton Rising, and the airport has sought to reduce the impact of existing operations over a number of years, including by working with the airport operator across many areas including waste and recycling, energy use and through certification with the Airport Carbon Accreditation (ACA) Programme, with ACA Level 3 certification ('Optimisation') achieved in 2021. The airport is now in the process of working towards subsequent ACA certification levels.
- 1.2.3 Expanding the airport to make best use of the existing runway offers clear employment and economic benefits, which are set out further in the **Need Case [TR020001/APP/7.04]**. However, the airport must expand in a sustainable way that safeguards the needs of future generations. It is also recognised that expansion of the airport has the potential to increase the airport's environmental effects, notwithstanding that, the proposals do their utmost to reasonably avoid or mitigate those effects.
- 1.2.4 Luton Rising's ambition is to be an industry leader in sustainable aviation, balancing its environmental, social and economic effects to enable growth and resilience at the airport. Its sustainability journey for an expanded airport was set out initially in the 'Vision for Sustainable Growth 2020-2050', published in December 2017, and the subsequent Sustainability 'Strategy', which was updated and republished in January 2022.
- 1.2.5 The Sustainability Strategy draws upon the United Nations' 17 Sustainable Development Goals and reflects Luton Rising's commitment to securing positive environmental outcomes from the airport's operation and expansion. The fundamental principles of the Sustainability Strategy, which are reflected where appropriate in the DCO proposals (as detailed in the **Sustainability Statement [TR020001/APP/7.06]**), are for the airport to:
- a. Protect and enhance the natural environment;
 - b. Deliver climate resilience and business continuity;

- c. Lead the transition to carbon net zero;
- d. Become a national hub for green technology, finance and innovation; and
- e. Be a place to thrive.

Figure 1.1: UN Sustainable Development Goals



- 1.2.6 The Sustainability Strategy is also supported by a specific Net Zero Strategy, published in February 2022, which sets out the Applicant’s plan for decarbonisation at the airport (independent from this application for development consent). Luton Borough Council (LBC) – the owner of Luton Rising – recently declared a climate emergency in Luton, setting the ambitious target of becoming a carbon neutral and climate resilient town by 2040, ahead of the Government’s target date by a decade. The Net Zero Strategy sets out how the airport will support LBC’s objective.
- 1.2.7 Luton Rising’s aspiration is to be a sustainability leader, building on its unique position as a community airport owner, by leading an ambitious transition towards net zero; restoring and regenerating the environment; futureproofing its assets; and strengthening its position as a world leader in creating community value through the delivery of inclusive socio-economic growth.
- 1.2.8 Luton Rising’s approach to achieving its strategic objectives recognises a varying degree of control and influence and the need to work closely with stakeholders to deliver opportunities and solutions across the full scope of the airport’s activities, including the airport’s future expansion. The GCG Framework is seen as a key element of this approach.
- 1.2.9 During the development of the proposals for an expanded airport, there has been an increased focus globally on environmental considerations, and

particularly climate change. Government policy surrounding the decarbonisation of the transport sector has also continued to evolve with the publication of the Transport Decarbonisation Plan in July 2021.

- 1.2.10 For the aviation sector, ‘Flightpath to the Future’ (published May 2022) set out a strategic framework for the aviation sector that supports the Department for Transport’s vision for a modern, innovative and efficient sector over the next 10 years, including putting the sector on course to achieve net zero greenhouse gas (GHG) emissions by 2050. This was followed by a specific net zero strategy for aviation, called Jet Zero, published in July 2022, following previous consultations on the approach and principles to reach net zero aviation by 2050. Supporting this strategy, the government has established the Jet Zero Council.
- 1.2.11 In 2020 the Government introduced legislation to give effect to the UK Emissions Trading Scheme (UK ETS), as a replacement for the UK’s previous participation in the EU ETS, and in 2021 it introduced legislation to bring the UK within the International Civil Aviation Organization (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).
- 1.2.12 The GCG Framework is one way in which Luton Rising, as the Applicant, is responding to these issues and the evolving policy environment by strengthening the proposals for limiting the environmental effects of the airport, including the GHG emissions associated with expansion.

1.3 What is Green Controlled Growth?

- 1.3.1 Green Controlled Growth (GCG) is an innovative new framework that has been developed since the 2019 Statutory Consultation took place to address the feedback received on environmental concerns, and the strong desire indicated by stakeholders for the airport to be more ambitious in its approach to reducing and mitigating the environmental effects of expansion. It is considered to be one of the most far-reaching commitments to managing environmental effects ever voluntarily put forward by a UK airport. Its definition is:

“Green Controlled Growth” (GCG) is a binding framework for managing the growth of the airport through the coming decades within definitive environmental limits.

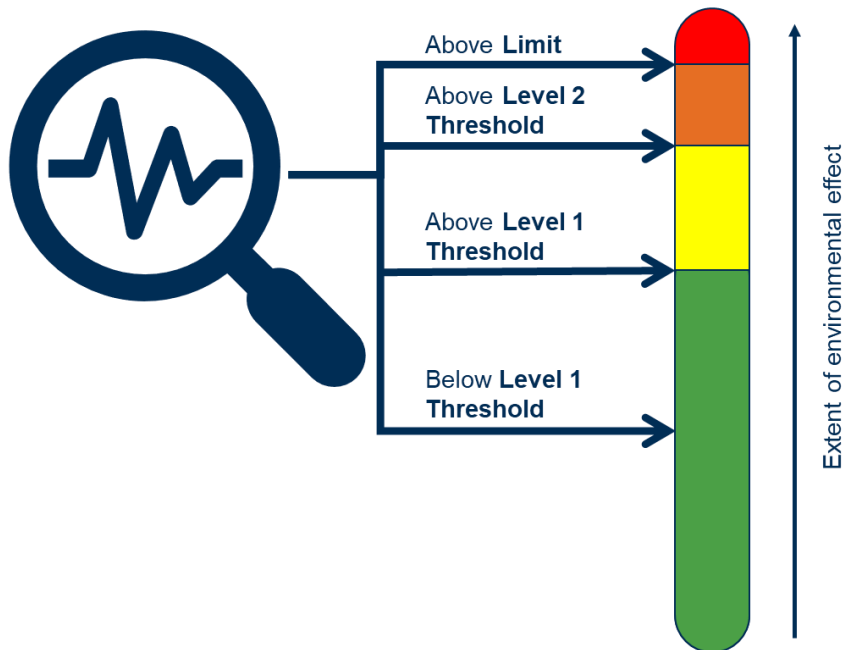
- 1.3.2 In order to place the Applicant’s commitment to environmental sustainability at the very centre of the expansion proposals, it is proposed that growth authorised by the DCO will be managed through the GCG Framework, within environmental Limits defined based on the outputs of the Environmental Impact Assessment (EIA) prepared for the application for development consent. GCG will therefore ensure a proactive approach to managing environmental effects is secured, with Limits applying in four key areas:
- a. Aircraft noise;
 - b. Air quality;

- c. Greenhouse gas emissions (for airport operations and surface access²); and
- d. Surface access.

- 1.3.3 The aircraft noise section of the GCG Framework also addresses the policies for the airport to produce a Noise Envelope to monitor, manage and control aircraft noise, including a defined mechanism to share the noise reduction benefits of future technological improvements in aircraft between the airport and local communities.
- 1.3.4 The assessment of performance against the Limits for the four environmental areas listed above will be undertaken annually, with defined monitoring and reporting requirements set out as part of the framework and secured through the DCO. GCG is not intended to manage day-to-day issues at the airport; rather, it considers the changes in overall environmental effects in these four areas as the airport grows over time, to ensure the 'reasonable worst case' assessment in the EIA is not exceeded.
- 1.3.5 Where monitoring has shown that a Limit has been exceeded, the airport will not be able to continue growing until a specific series of steps have been followed, as defined by the framework. Compliance with each of these steps will be secured through the DCO, and enforcement action could be taken if growth at the airport continued in contravention of the GCG Framework.
- 1.3.6 To oversee the GCG Framework, a new, independent body known as the Environmental Scrutiny Group (ESG) will be established. As the airport grows, environmental monitoring will be undertaken and submitted annually to the ESG, via a series of topic-specific Technical Panels. Both the ESG and Technical Panels will include representatives of local authorities and independent technical specialists. The ESG will also be responsible for approving mitigation measures if a Limit was exceeded at any point. In this way, the ESG will provide independent oversight and scrutiny of the airport's growth and impacts.
- 1.3.7 Sitting below each Limit, there will be two Thresholds; a Level 1 Threshold and a Level 2 Threshold. Similar to any potential exceedances of a Limit, there are separate processes to be followed by the airport operator as each Threshold is reached. This is a proactive approach with the aim of ensuring that as the airport grows, environmental Limits will be respected. The approach to Limits and Thresholds is summarised in Figure 1.2.
- 1.3.8 The processes within the GCG Framework also have to fit within internationally agreed guidelines and domestic legislation for the allocation of slots at an airport to users (as it is through this mechanism that controls on growth will be implemented).

² See Section 3.3.36 for further information on why aviation emissions have not been included within GCG.

Figure 1.2: Approach to Limits and Thresholds



1.3.9 The key elements of the legally binding GCG Framework secured through the DCO are therefore:

- a. Limits on environmental effects in four key areas;
- b. A series of processes to be followed as environmental effects reach Thresholds defined below these Limits;
- c. Ongoing monitoring of the actual environmental effects of expansion and operations at the airport in four key areas;
- d. Independent oversight of environmental effects associated with the operation of the airport; and
- e. An explicit commitment to link environmental performance to growth at the airport.

1.4 What are the benefits of Green Controlled Growth?

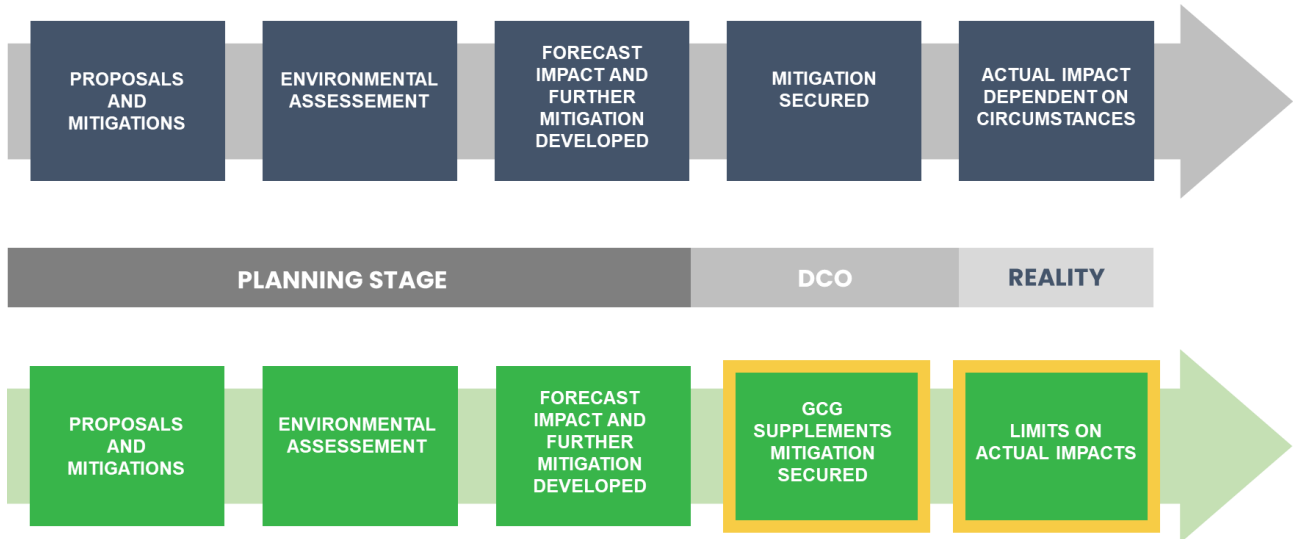
1.4.1 As with any significant development, the applicant has reviewed the potential environmental effects of the expansion of the airport through a comprehensive Environmental Impact Assessment (EIA), which is a statutory requirement. The conclusions of the EIA are reported in the **Environmental Statement [TR020001/APP/5.01]** submitted as part of this application for development consent.

1.4.2 The proposals have been developed with the expected environmental effects of the expansion of the airport firmly in mind. A fundamental principle of the Proposed Development has been to 'design in' sustainability and environmental excellence, and decisions about all aspects of the Proposed Development's design have been taken with a view to managing and, where possible, avoiding or mitigating negative environmental effects.

- 1.4.3 The Environmental Statement identifies the full range of likely significant effects resulting from the Proposed Development and will highlight where additional mitigation is being proposed to reduce the magnitude of those effects.
- 1.4.4 A design decision to reduce or avoid an environmental effect is known as 'embedded mitigation'. Embedded mitigation represents the first means by which it is aimed, through the infrastructure proposals, to minimise (or avoid entirely) negative environmental effects.
- 1.4.5 An example of embedded mitigation in the proposals is the siting of particular elements of airport infrastructure to avoid protected ecological habitats. Key elements of embedded mitigation are explained in the Environmental Statement which accompanies the application for development consent.
- 1.4.6 Over and above this, where environmental effects cannot be 'designed out' through embedding mitigation in the scheme's design, specific mitigation measures have been proposed as necessary to make the environmental effects of the scheme acceptable, as set out in Section 1.5.
- 1.4.7 Any EIA is to some extent reliant on forecasting external changes which are outside of the Applicant's control. As an example, neither the airport owner nor the airport operator can directly control the proportion of the UK vehicle fleet accounted for by electrically powered vehicles, which bears on the environmental effects of expansion. Nor does the airport operator have direct control over which aircraft are used by airlines to operate specific routes from the airport.
- 1.4.8 The EIA process may require the forecasting of environmental effects long into the future and this can also introduce some level of uncertainty. This means, for example, new and currently unforeseen mitigation measures may potentially be available in 2040 that are more effective or have fewer disbenefits than the measures currently expected to be implemented. Typically, this means that a project's eventual effects will depend to some extent on future circumstances.
- 1.4.9 However, whilst all significant infrastructure projects making applications for development consent or planning permission require consideration of environmental effects (i.e. in the form of an EIA), the development consent or planning permission rarely imposes checks or limits on the extent of most (or all) of the effects themselves. The assessment of environmental effects is typically, therefore, based solely on forecasts put forward at the time of consent, often long into the future. Mitigation is then developed based on the forecasted environmental effects, which is usually fixed at the time of development consent and secured through the DCO or planning permission.
- 1.4.10 Implementing 'Limits' through GCG means that the environmental effects of the expansion of the airport will not be solely dependent on how well mitigation and other controls identified and secured at the planning stage work in practice. Instead, it is proposed to create a dynamic mechanism that will make future growth dependent on achieving clear environmental objectives in the real world. The GCG Framework is an adaptive management framework based on the environmental effects actually observed.

1.4.11 In this way, GCG supplements the existing EIA process, as it does not replace or substitute the need for any mitigation measures identified by the EIA; rather it gives additional certainty that the environmental effects forecast will not be exceeded irrespective of the performance of the fixed mitigation measures initially secured.

Figure 1.3: Comparison of GCG approach to traditional approach



1.4.12 The second key benefit of GCG compared to traditional approaches is the escalating sequence of checks outlined in Figure 1.2. Where controls are placed on environmental effects associated with development proposals or infrastructure projects today, these are often expressed in binary terms using planning conditions or Section 106 planning obligations; “Impact X shall not exceed Y...”. This means that action only needs to be taken once a limit or control has already been exceeded.

1.4.13 By including Level 1 and Level 2 Thresholds in the GCG Framework, growth will be required to be planned, and steps to be taken before a Limit is reached, with the ultimate intention that this early action avoids the Limit being exceeded. By taking this proactive approach, it will ensure that the plans for growth are adjusted in response to the prevailing circumstances at the time, rather than waiting for a problem to occur and then reacting.

1.4.14 Through the GCG Framework, the airport will therefore commit to growing and operating the airport in the future within a meaningful and challenging framework of binding environmental constraints, which must not be exceeded.

1.4.15 It is the belief of the Applicant that the GCG Framework is one of the most far-reaching commitments to managing environmental effects ever voluntarily put forward by a UK airport.

1.5 The environmental topics within Green Controlled Growth

1.5.1 Through the GCG Framework, a series of clearly specified ‘Limits’ for the individual environmental effects of the expanding, expanded, and lifetime

operation of the airport are proposed. By enshrining these Limits as part of the DCO, the GCG Framework will ensure that the actual effects of the airport as they manifest over time are monitored and timely measures taken to ensure those Limits are not exceeded.

- 1.5.2 The EIA addresses 15 separate environmental topics in addition to the in-combination and cumulative effects of the Proposed Development. It is proposed that GCG focuses on four key environmental topics which are directly linked to the throughput of the airport and where, therefore, environmental effects on communities have the greatest potential to change as the numbers of flights and passengers using the airport increase over time. GCG will therefore manage the effects associated with:
- a. Aircraft noise, via a Noise Envelope;
 - b. Air quality;
 - c. Greenhouse gas emissions (for airport operations and surface access³); and
 - d. Surface access.
- 1.5.3 These are considered to be the most appropriate topics for GCG to cover for several reasons. They are the environmental topics that could result in adverse environmental effects that are most closely correlated with the growth of the airport in terms of passenger numbers and aircraft movements. As a consequence, these are the effects that are subject to greater potential uncertainty over time, as the extent of these effects will change as the airport expands. Aircraft noise and air quality are also considered to be topics that are of relevance to human health, as set out in **Chapter 13** of the **Environmental Statement [TR020001/APP/5.01]**.
- 1.5.4 Other environmental topics and their resulting effects are not included within the scope of GCG as they are not directly correlated with the growth of the airport and are instead a function of the design and construction of the Proposed Development. These include, for example, the environmental effects of the proposed new earthworks and construction activities on archaeology and biodiversity. These effects will be managed and mitigated in accordance with the measures identified in the Environmental Statement and secured separately through the DCO. The **Mitigation Route Map [TR020001/APP/5.09]** sets out the range of ways in which mitigation is secured through the DCO, in addition to the GCG Framework.
- 1.5.5 It is acknowledged that there must be a balance between protecting surrounding communities against unacceptable levels of environmental effects, and not placing an unsustainable burden on both the airport operator and local authorities in respect of the administration of monitoring, reporting, and enforcement of the GCG Framework. On that basis, the Applicant believes that the four topics that GCG is proposed to cover are those that are of key importance, and where effects greater than those forecast may have the

³ See Section 3.3.36 for further information on why aviation emissions have not been included within GCG.

greatest potential to affect communities around the airport and other key stakeholders.

- 1.5.6 A range of management plans and strategies covering other environmental topics have also been submitted as part of the application for development consent, in addition to Luton Rising's overall Sustainability Strategy which was updated and published in January 2022. The DCO plans and strategies most relevant to GCG include the following:
- a. **Environmental Statement Appendix 7.5** Outline Operational Air Quality Plan [TR020001/APP/5.02];
 - b. **Environmental Statement Appendix 12.1** Outline Greenhouse Gas Action Plan [TR020001/APP/5.02];
 - c. **Environmental Statement Appendix 16.2** Operational Noise Management (Explanatory Note) [TR020001/APP/5.02];
 - d. **Surface Access Strategy** [TR020001/APP/7.12]; and
 - e. **Framework Travel Plan** [TR020001/APP/7.13].
- 1.5.7 These plans and strategies set out the mitigation measures proposed to reduce and control impacts arising from the Proposed Development, as identified through the EIA process for the respective environmental topics. Where appropriate, their implementation is secured through requirements within the **DCO** [TR020001/APP/2.01]. More information on these mitigation measures, and how they are to be secured, is provided in the **Mitigation Route Map** [TR020001/APP/5.09].
- 1.5.8 The GCG Framework provides an additional and supplemental mechanism through which the operation of the Proposed Development is monitored, independently reviewed, and measures taken should the environmental effects of the Proposed Development approach or exceed those predicted by the environmental assessment.
- 1.5.9 Further detail on their interface with the plans required through GCG is provided in Section 3.

1.6 How the Applicant has responded to feedback

- 1.6.1 Between October and December 2019, the Applicant held a statutory consultation where views were sought on the expansion proposals. GCG is a proposal that has been developed since the 2019 Statutory Consultation took place, to address the feedback received on environmental concerns, and the strong desire indicated by stakeholders for the airport to be more ambitious in its approach to reducing and mitigating the environmental effects of expansion. Full details of the feedback received during the 2019 Statutory Consultation and the Applicant's response can be found in the **Consultation Report** [TR020001/APP/6.01].
- 1.6.2 In addition to public consultation, the airport has been engaging on an ongoing basis with key stakeholders as the GCG Framework has been developed. Feedback has been sought from (but not limited to):

- a. Local authorities
- b. The Department for Transport
- c. The Civil Aviation Authority (CAA)
- d. The airport operator, LLAOL
- e. Aircraft operators

1.6.3 Through this engagement, the Applicant has worked to develop processes within GCG that address stakeholder concerns over the environmental effects of expansion on communities around the airport, whilst also acknowledging the legislative and operational constraints that the airport operator and airlines work within.

1.6.4 the Applicant presented the Draft GCG Proposals publicly for the first time during the Statutory Consultation 2022, which ran from February to April 2022. The key changes that have been made as a result of this feedback are as follows:

- a. *Environmental Scrutiny Group membership* – Comments and suggestions were received over potential membership of both the ESG and Technical Panels, with a view to each body having a greater degree of independence. The membership of both groups has been reviewed and the Applicant has approached a number of suggested bodies to determine if they would be willing to take up roles. There were also suggestions put forward around the need for local communities to have a voice within the GCG Framework. A mechanism has therefore been set out (see Section 2.5) through which engagement with local communities will take place to inform the deliberations of the Technical Panels and ESG. Alongside this, Terms of Reference for the ESG and Technical Panels have been drafted, and are included at **Appendix A** and **Appendix B** of the **GCG Framework [TR020001/APP/7.08]** respectively, so that their operation can be assessed as part of the application for development consent.
- b. *Responding to future technology* – Feedback was received that Limits should evolve over time to take account of new technology and changes to external constraints. In response, a mandatory periodic review mechanism has been included within GCG, to review whether the overall processes of the framework are working as intended. Specifically for the Limits a formal mechanism has also been included for noise effects to be periodically reviewed, and potentially for more ambitious targets (consistent with the growth consented under the DCO) to be adopted where future technology and circumstances allow. Similarly, the approach to air quality now includes provision for periodic review of background concentrations of pollutants, with a requirement to review Limits in response to changes in national legislation. A requirement is also proposed to review the airport operations GHG Limits to align with the requirements of the Jet Zero Strategy where circumstances allow once these become clearer. Finally, there is now an additional provision for the review of the definitions of the surface access mode share Limits if new

modes of transport are used at the airport in the future (for example, autonomous vehicles).

- c. *A clear approach to monitoring* – A number of consultation responses stated that there needed to be greater certainty and transparency as to how environmental effects will be measured and reported. To address this, Monitoring Plans have been drafted for each of the environmental topics in scope for GCG to be approved through and secured by the DCO, which are included at **Appendices C to F** of the **GCG Framework [TR020001/APP/7.08]**.
- d. *Decarbonisation of Surface Access* – Feedback was received that GCG should be used to drive more ambition around reducing greenhouse gas emissions from surface access. In response, the surface access GHG Limit has been aligned with Luton Rising’s commitment made through its Net Zero Strategy to be carbon neutral for surface access by 2040.

1.6.5 The Applicant has had regard to all feedback received on the Draft GCG Proposals through this consultation, and where changes have not been made as suggested, further reasoning is set out within the responses to the consultation in the **Consultation Report [TR020001/APP/6.01]**.

1.7 Who will implement Green Controlled Growth?

1.7.1 The airport is wholly owned by Luton Rising (a trading name of London Luton Airport Limited). In turn, Luton Rising is wholly owned by Luton Borough Council.

1.7.2 In 1998, Luton Rising and LBC entered into a concession agreement with London Luton Airport Operations Limited (LLAOL) for the management, operation and development of the airport. This agreement, which lasts until 2032, means that LLAOL has complete responsibility for, and control over, the day-to-day running of the existing airport. This ownership and operational structure is shown in [Figure 1.4](#).

Figure 1.4: Ownership and management structure of the airport



1.7.3 As the airport’s owner and the Applicant submitting the application for development consent, Luton Rising has a significant role to play in shaping the airport’s long-term future. As the landlord of the airport, it is Luton Rising’s intention that those that operate the airport over the short and longer term must do so having full regard to all of the obligations that this DCO and particularly

the GCG Framework place on them in regard to the implementation of future growth.

- 1.7.4 Under the terms of the current concession, LLAOL will operate the airport until 2032. However, due to the way that DCOs work, any requirements secured through the Order (including the requirement to implement GCG) fall to the undertaker of the development, which in this case is Luton Rising.
- 1.7.5 Accordingly, Article 8 of the **DCO [TR020001/APP/2.01]** sets out the proposed mechanism, through an agreement between Luton Rising and LLAOL, by which the benefit of the order (as defined by Article 7) will be granted from Luton Rising to LLAOL. The grant is subject to the same restrictions, liabilities and obligations as would apply under the Order as if those benefits or rights were exercised by the undertaker.
- 1.7.6 At the end of the current concession, the restrictions, liabilities and obligations to implement GCG would revert from LLAOL to Luton Rising. They would remain with Luton Rising until a new transfer/grant agreement was entered into with an operator. In this way, the requirement to implement GCG as a result of the DCO will always be in place (whether with the airport operator or Luton Rising) and can also be transferred/granted to any future operator.
- 1.7.7 Within this document therefore, when referring to the processes and requirements of the GCG Framework, reference is made to the airport operator, rather than Luton Rising (as the Applicant), as if the benefit of the order has been transferred/granted and the airport operator is the undertaker for the purposes of the Part 3 of Schedule 2 to the DCO. As part of the development of these proposals, Luton Rising has worked closely with LLAOL to understand how both parties can build upon the work undertaken to date to increase the sustainability of operations at the airport and ensure that GCG is delivered successfully.

1.8 How does growth occur at the airport?

- 1.8.1 To understand how GCG will function in practice, it is important to understand how growth occurs at the airport. Growth can be considered either in terms of the total number of passengers utilising the airport, or the total number of flights taking-off and landing.
- 1.8.2 The Proposed Development will see the passenger cap raised to 32 mppa.
- 1.8.3 Whilst growth in passenger numbers is not solely related to an increase in flights, as existing flights could be operated with fewer empty seats (higher load factors), or existing planes could be replaced with larger alternatives, the Proposed Development will enable more flights per year compared to the numbers required to deliver the current passenger cap.
- 1.8.4 Many airports around the world, including London Luton Airport, do not have unconstrained capacity to meet the demand of all airlines and other aircraft operators – particularly at specific times of the day, such as early morning departures, or parts of the year, such as summer holidays. London Luton Airport, in common with all London airports (excluding Southend), is a

‘Coordinated Airport’, which means that the process of allocating and co-ordinating slots at the airport is carried out by an independent third party, Airport Co-ordination Limited (ACL).

- 1.8.5 The process by which slot co-ordination is carried out was established through EU legislation, which has since been transposed into UK law and remains in force following the United Kingdom’s departure from the EU. These regulations are also consistent with international industry guidance (Ref 1.1), developed and kept up to date by the International Air Transport Association (IATA), an international airline trade body, alongside the Airports Council International and the Worldwide Airport Coordinators Group.
- 1.8.6 A process known as ‘slot allocation’ is used to allocate and manage limited capacity, with the aim of maximising the efficient use of available capacity at an airport, whereby ‘slots’ are allocated to individual aircraft operators giving them permission to land or take-off at a specific time and date.
- 1.8.7 The number of slots is determined by the airport’s ‘capacity declaration’. A capacity declaration is made twice per year and is used to establish co-ordination parameters for each of the summer and winter seasons⁴.
- 1.8.8 These co-ordination parameters set out the maximum capacity available for allocation to aircraft operators considering the functional limitations at the airport such as runway, apron, terminal, airspace, and environmental restrictions and typically relates to hourly or sub-hourly limits.
- 1.8.9 Capacity declarations are made approximately seven months in advance of the operations to enable long-term planning of flight schedules by airlines (i.e. a capacity declaration will typically be made in September governing the number of slots available for the following summer period April-October). A capacity declaration is made by the airport operator, having first consulted the Luton Airport Coordination Committee (LACC), comprised principally of the main airlines using the airport, the air traffic control operator and the airport operator.
- 1.8.10 The Proposed Development will increase the airport’s capacity by providing new infrastructure, including taxiways, stands and a second terminal, which will allow the airport operator to increase its capacity declaration over time. More slots could then be allocated to aircraft operators, particularly in peak periods, leading to an increase in the overall number of movements at the airport as the airlines seek to meet passenger demand.
- 1.8.11 The majority of slots in peak periods are allocated twice a year, for the summer and winter seasons. The first slots to be allocated are those that have ‘grandfather rights’. This means that where an airline has used an allocated slot for at least 80% of the time in the preceding season, it is entitled to the same slot for the following season, although can operate the slot with a different destination or possibly a different aircraft. Since these grandfather rights are enshrined in law, this means that these slots cannot be taken back by either

⁴ The summer season commences on the last Sunday in March and runs to the last Saturday of October, and the winter season commences on the last Sunday in October and ends on the last Saturday of March.

ACL or the airport operator, and the airline has a legal right to continue operating the flight.

- 1.8.12 If a slot has not been used 80% of the time it is returned to the ‘slot pool’, along with any new slots created through additional capacity at the airport. Airlines then apply to ACL for slots to be allocated from the slot pool, with priority given to new entrants to the market to encourage competition.
- 1.8.13 It is important to note that there are typically more and less desirable times for airlines to fly to and from airports. Available slots at popular times are typically taken up first, leaving available slots at less popular times of the day and year. Hence, within any capacity declaration, there will typically be available slots that can be taken up by the airlines allowing growth at an airport without the hourly capacity necessarily having been increased through the provision of new infrastructure. Business aviation activity in particular typically operates in this way, where flights are not scheduled far in advance, and available slots are instead allocated on an ad hoc basis when requested by aircraft operators.
- 1.8.14 The GCG Framework has been developed to align with the statutory requirements of the Slot Allocation Regulations, and the ways in which growth at the airport can be constrained must meet these statutory requirements. Section 2.6 sets out how this could be achieved.

1.9 How will Green Controlled Growth be secured?

- 1.9.1 This GCG Explanatory Note is intended to act as a narrative to explain the GCG approach which forms part of the application for development consent. It is accompanied by the **GCG Framework [TR020001/APP/7.08]**, which sets out the necessary processes and details of Limits and Thresholds that are required for the functioning of the GCG approach.
- 1.9.2 The GCG Framework, along with the Terms of Reference and Monitoring Plans included as appendices to it, will be secured by Schedule 2 and ‘certified’ by Schedule 9 of the **DCO [TR020001/APP/2.01]**.
- 1.9.3 Part 3 of Schedule 2 of the DCO will secure the requirement to follow the processes of the GCG Framework, including requirements to undertake monitoring and reporting, requirements when Level 2 Thresholds and Limits are reached, and what the values of those Thresholds and Limits are. Through the remainder of this document, specific paragraphs of this part of the Order are referenced to provide clarity on how particular aspects of GCG are secured.
- 1.9.4 As discussed in Section 1.7, Article 8 of the DCO then sets out how the provisions referenced above will be transferred from the Applicant to the airport operator.
- 1.9.5 Overview of document
- 1.9.6 The following two sections of this document set out the detailed proposals for GCG. Section 2 outlines how the GCG framework will be structured, and the required processes as each of the Level 1 Threshold, Level 2 Threshold and Limit are reached. It also explains the approach to monitoring and reporting and outlines how independent oversight via the proposed new Environmental

Scrutiny Group and Technical Panels will be secured. Finally, it sets out how GCG will interact with the current 'slot allocation' process that governs how the airport grows, and how enforcement action could be taken should the requirements set out around GCG in the DCO not be followed.

1.9.7 Section 3 of the document sets out the technical detail with respect to each of the four GCG environmental topic areas, including the approach taken to monitoring and managing environmental effects, as well as the proposed values for Thresholds and Limits.

1.9.8 Section 4 provides a summary of this document.

2 THE GREEN CONTROLLED GROWTH PROPOSALS

2.1 An overview of Green Controlled Growth

- 2.1.1 This section sets out the Applicant's innovative GCG Framework. As set out in Section 1.3, there are a number of elements to the GCG Framework. This section covers these in more detail.
- 2.1.2 The first two elements of the legally binding GCG Framework are **Limits on environmental effects in four key areas** and **an escalating sequence of checks as environmental effects reach Thresholds defined below these Limits**. The detail of Limits and Thresholds is covered in Section 2.2.
- 2.1.3 The next element is **ongoing monitoring of the actual environmental effects of expansion and operations at the airport**. Section 2.3 sets out how this monitoring and reporting process will work.
- 2.1.4 Section 2.4 sets out how **independent oversight of environmental effects associated with the operation of the airport** will work, through the formation of the proposed Environmental Scrutiny Group and Technical Panels.
- 2.1.5 The final element of the GCG Framework is **an explicit commitment to link environmental performance to growth at the airport**. Section 2.6 sets out how the GCG Framework will interact with the slot allocation process, which underpins how growth happens at the airport.
- 2.1.6 Finally, Section 2.7 sets out how compliance with the GCG Framework will be secured, and the enforcement process if the airport does not carry out actions that are required by the GCG Framework.
- 2.1.7 Section 3 provides the technical position with regard to the Limits for each of the environmental topics. This includes what environmental effects will be monitored and reported, and the values for Thresholds and Limits.
- 2.1.8 It is proposed that the GCG Framework should only apply to any growth that occurs at the airport beyond the consented baseline position (i.e. above the existing consented passenger cap). This is triggered by notice under Article 44(1) of the **DCO [TR020001/APP/2.01]** being served. When the notice is served under Article 44(1) of the DCO the conditions in the existing planning permission will cease to apply and the GCG requirements along with other requirements relating to operation will be required to be implemented as per the provisions of the order.

2.2 Limits and Thresholds

- 2.2.1 It is proposed that the GCG Framework will manage the ongoing environmental effects of expansion in four key areas:
- a. aircraft noise, via a Noise Envelope;
 - b. air quality;
 - c. greenhouse gas emissions (airport operations and surface access); and
 - d. surface access.

2.2.2 ~~Table 2.1~~ **Table 2.4** sets out the effects that will be limited under each of these environmental topics, together with an indication of how the Limit will be expressed. More detail on the technical aspects of the Limits is included in Section 3. The Limits are informed by the comprehensive EIA and other assessments such as the **Transport Assessment (TA) [TR020001/APP/7.02]**, which have been undertaken to identify the likely environmental effects of the Proposed Development.

Table 2.1: Approach to GCG Limits

Environmental topic	Potential effect	What GCG will control
Aircraft noise	Increased exposure to aircraft noise for local communities and other noise sensitive receptors	Total area of aircraft noise contours (daytime and night-time)
Air quality	Increased exposure to pollutants for local communities	Specified pollutant concentrations
GHG emissions	Increased GHG emissions, contributing to climate change	GHG emissions per annum (airport operations and surface access only ¹)
Surface access	Increased congestion on local and strategic road networks	Maximum % of passengers and staff travelling by 'non-sustainable modes' (e.g. private car, taxi or motorcycle)

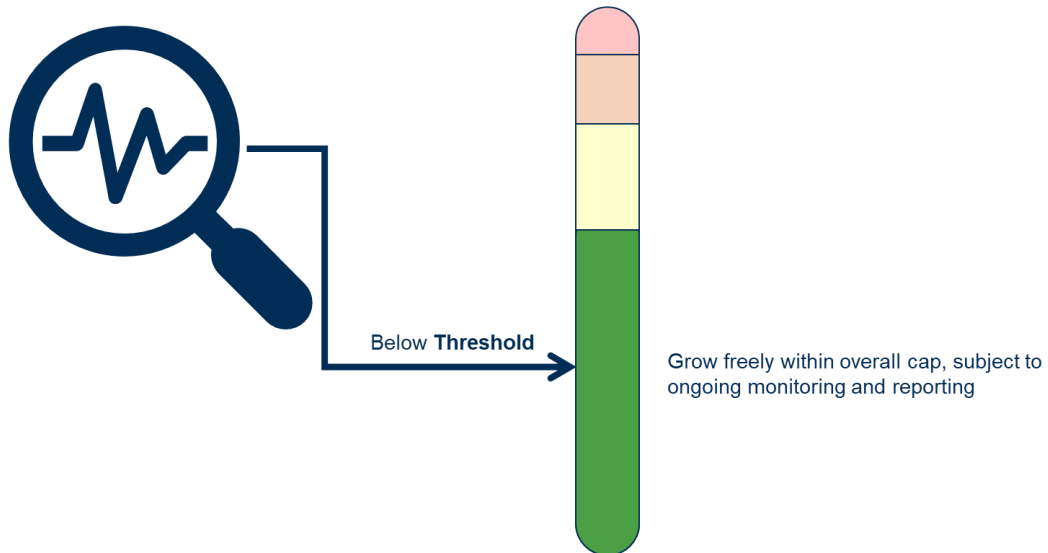
2.2.3 For each of these four topics, Section 3 defines at least one **Level 1 Threshold**, **Level 2 Threshold** and **Limit**. Performance against each Limit and Threshold will be considered independently of the others, and the processes for a breach of Limit or exceedance of a Threshold (as set out in the remainder of this Section) will apply to each individual exceedance or breach, though each may be noted in the same Monitoring Report, and addressed in the same Level 2 Plan or Mitigation Plan where it relates to the same topic. Controls on growth would be based on the highest adverse impact observed and reported via the relevant Monitoring Plan, and thus, growth at the airport would stop if any one Limit was breached, irrespective of the performance against the remaining Limits.

2.2.4 A fundamental principle of the GCG Framework is that, as the magnitude of a particular environmental effect increases, a series of checks are implemented as the airport continues to grow. This is intended to ensure that the extent to which an effect is occurring can be controlled as it approaches a GCG Limit, with the ultimate intention that the Limit is not exceeded.

¹ Aviation GHG emissions are not included with the GCG Framework, as the Government’s Jet Zero strategy sets out that the decarbonisation of aviation and the required policy measures are best addressed at a sectoral level, through measures such as the UK ETS. Further information on these sectoral measures is provided in Section 3.3.36.

- 2.2.5 While environmental effects remain below all Thresholds and Limits, the airport will operate as it does today, subject to ongoing monitoring and reporting of environmental effects as required by the GCG Framework, and any other requirements of the DCO. This is illustrated in Figure 2.1.

Figure 2.1: Actions below a Level 1 Threshold

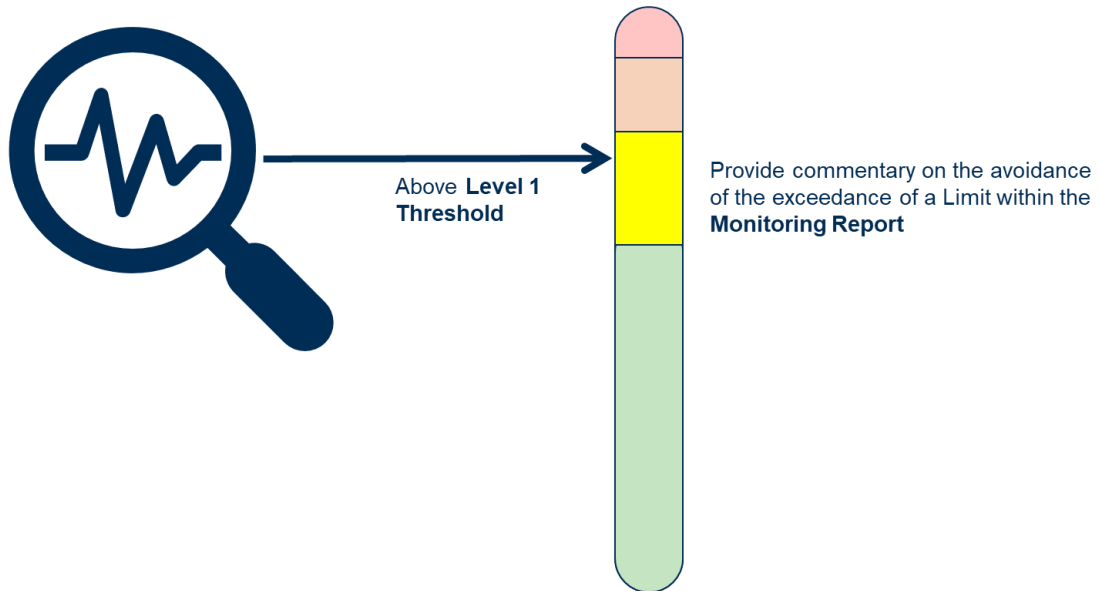


Level 1 Thresholds

- 2.2.6 If, when preparing a Monitoring Report (see Section 2.3) the airport operator identifies that any individual environmental effect is above the relevant Level 1 Threshold, the Monitoring Report must include commentary on the avoidance of the exceedance of a Limit. That commentary could include, for example, if the airport operator considers any interventions or measures are needed or are already planned to be brought forward in the forthcoming year that will mitigate the effects of future growth against the Limits. This is illustrated in Figure 2.2.
- 2.2.7 The monitoring results for each of the individual environmental topics that inform the Monitoring Report must be submitted by the airport operator to the relevant Technical Panel prior to the submission of the Monitoring Report to the ESG (see Section 2.4) for review.
- 2.2.8 The ESG can subsequently provide comment on the Monitoring Report for the airport operator's consideration. However, it should be noted that the airport would be expected to be routinely operating above the Level 1 Thresholds, particularly as growth is brought forward. As such, it is not considered appropriate for the ESG to have a formal 'approval' role for Monitoring Reports where the airport is operating above a Level 1 Threshold but below a Level 2 Threshold, as this is considered to constitute routine airport operations. The ESG's role in relation to Monitoring Reports will therefore only relate to providing commentary and giving consideration to their compliance with the Monitoring Plans approved through the DCO.

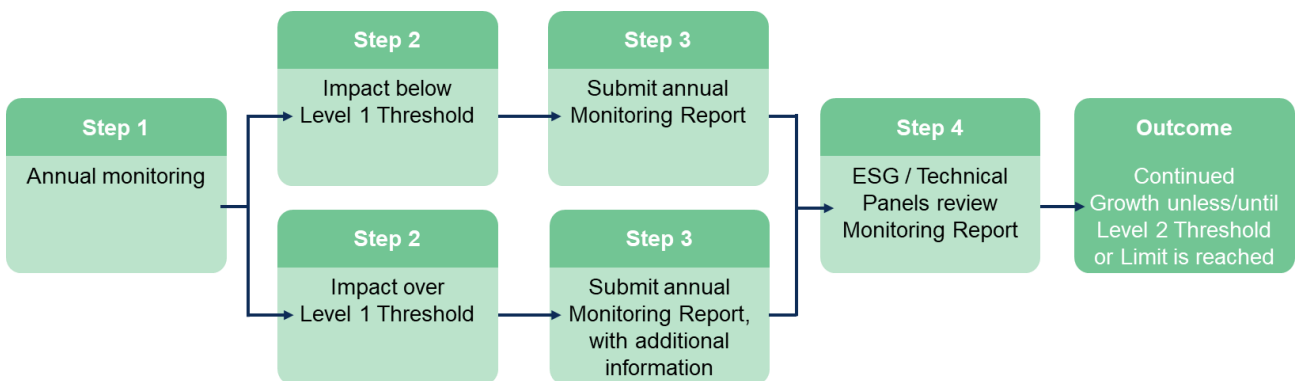
2.2.9 As the first point in the escalating series of steps as environmental effects increase towards a Limit, the commentary in the Monitoring Report will set out how growth at the airport can be managed without breaching the Limit and provides the ESG with an opportunity to comment on the way that airport growth is being brought forward.

Figure 2.2: Actions above a Level 1 Threshold



2.2.10 The proposed approach to Monitoring Reports (where effects are above or below Level 1 Thresholds) is set out in [Figure 2.3](#). This process is captured in paragraph 21 of Schedule 2 of the **DCO [TR020001/APP/2.01]**.

Figure 2.3: Proposed approach to Monitoring Reports

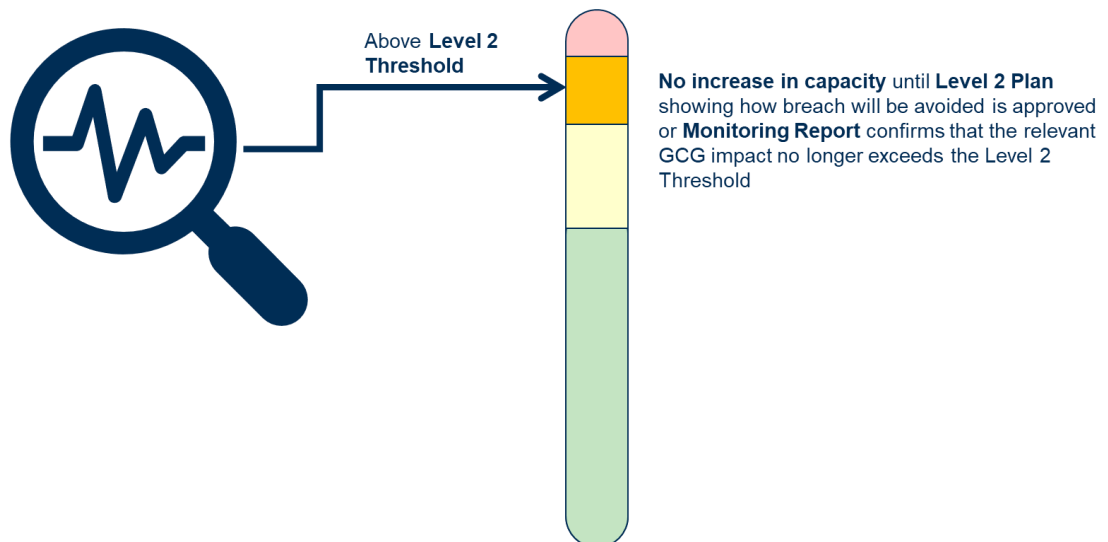


Level 2 Thresholds

2.2.11 A Level 2 Plan will be required whenever Monitoring Reports show that any GCG environmental effect(s) have exceeded a Level 2 Threshold, without exceeding the Limit, unless it is certified by the ESG that the exceedance is due to circumstances beyond the control of the airport operator (see paragraphs 2.2.37 to 2.2.43).

- 2.2.12 Where more than one Level 2 Threshold has been exceeded, the airport operator may decide to produce separate Level 2 Plans which may be submitted at the same time, or, where the airport operator considers that the exceedances are related, to address all of the related exceedances of Level 2 Thresholds in a single Level 2 Plan. An example of this could be where an exceedance of the Level 2 Threshold for surface access is considered to be linked to the exceedance of a Level 2 Threshold for air quality, and the mitigation that the airport operator would bring forward to reduce non-sustainable mode share would also be effective in improving air quality (through fewer airport-related vehicles on the road).
- 2.2.13 A draft Level 2 Plan should be prepared by the airport operator and submitted to the ESG no later than 21 days after submission of the Monitoring Report to ESG (unless a longer period is agreed with the ESG). The airport operator may also submit it alongside a Monitoring Report showing an exceedance of the Level 2 Threshold(s).
- 2.2.14 Where a Level 2 Threshold has been exceeded, unless otherwise agreed by the ESG, the airport operator must ensure that any future airport capacity declaration (being hourly runway capacity) does not increase from the existing capacity declaration until either; a Level 2 Plan has been approved by the ESG or Secretary of State, or a Monitoring Report confirms that the relevant effect(s) no longer exceeds the Level 2 Threshold. However, within a capacity declaration it will still be permitted for new slots to be allocated. This is illustrated in Figure 2.4.

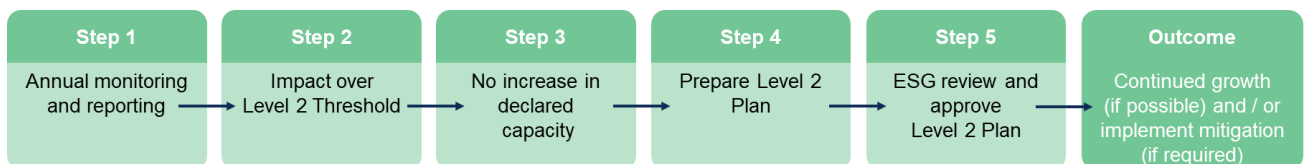
Figure 2.4: Actions above a Level 2 Threshold



- 2.2.15 A Level 2 Plan will firstly need to consider whether continued operations at the declared level of airport capacity is expected to result in the effect(s) increasing above the Limit. If this is the case, the Level 2 Plan should include proposals for additional interventions or mitigation, including timescales for their delivery, to ensure that the Limit will not be exceeded. On approval, it will then be a requirement that these additional interventions or mitigation are implemented.

- 2.2.16 Where a Level 2 Plan considers that continued operations at the declared level of airport capacity are not likely to result in effect(s) increasing above the Limit, the Level 2 Plan may subsequently consider whether the airport capacity declaration can be increased, having regard to possible further interventions or mitigation, without the Limit being breached. If a Level 2 Plan demonstrates this and is approved by the ESG, then this level of capacity increase can subsequently be declared by the airport operator, alongside the implementation of any additional interventions or mitigation identified by the Level 2 Plan.
- 2.2.17 Where a Level 2 Plan identifies a need for additional mitigation, it will need to include a programme for implementation of this, and the mitigation will subsequently need to be delivered according to these timescales.
- 2.2.18 The Level 2 Plan could apply for a period greater than one year. In these circumstances, it will not be required to be updated until the end of this period, unless the level of future growth considered in the Level 2 Plan had been achieved, or passenger throughput reaches the point at which the Thresholds and Limits will change as set out in Section 3.1.
- 2.2.19 If, in the reasonable opinion of ESG (as informed by the Technical Panels) a draft Level 2 Plan is not likely to satisfactorily avoid a breach of the GCG Limits, the ESG may request reasonable modifications to be made to the airport operator’s plans. The ESG must then approve or refuse the Level 2 Plan, with written reasons for the decision required to be provided to the airport operator. This decision is subject to any appeal that the airport operator may make, as set out in Paragraph 2.2.49.
- 2.2.20 The ESG should reach a decision on whether or not to approve a Level 2 Plan within 28 days of submission by the airport operator, unless a longer timescale is agreed by all parties. Where a decision is not made in writing within this 28 day period, the Level 2 Plan will be deemed to be approved.
- 2.2.21 The proposed approach to Level 2 Plans when a Level 2 Threshold is first exceeded is set out in [Figure 2.5](#). This is captured in Paragraph 23 of Schedule 2 of the **DCO [TR020001/APP/2.01]**.

Figure 2.5: Proposed approach to Level 2 Plans



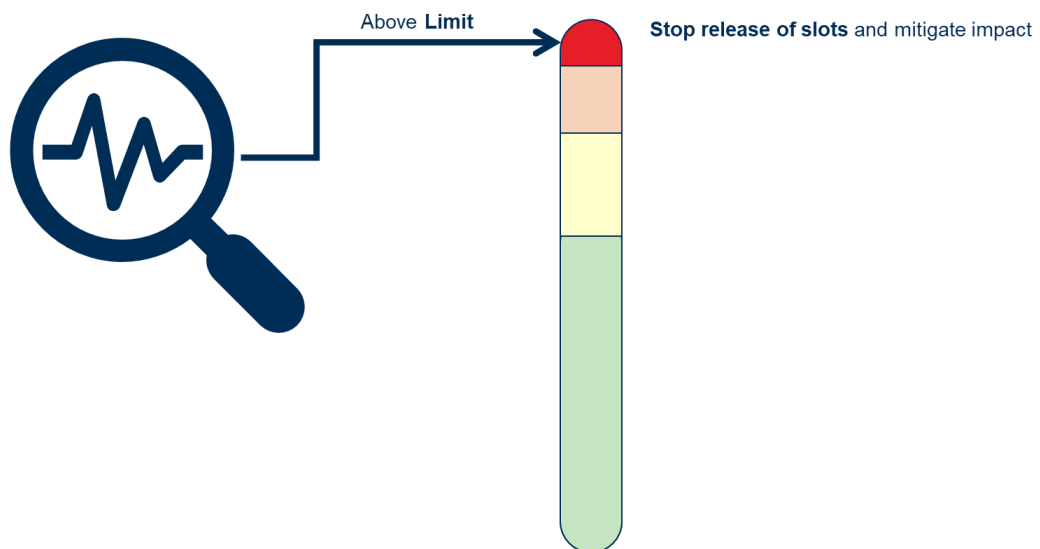
Limits

- 2.2.22 A Mitigation Plan will be required whenever Monitoring Reports show that any GCG environmental effect(s) has breached a Limit, unless it is certified by the ESG that a breach is due to circumstances beyond the control of the airport operator (see paragraphs 2.2.37 to 2.2.43).
- 2.2.23 Where more than one Limit has been breached, the airport operator may decide to produce separate Mitigation Plans which may be submitted at the same time,

or, where the airport operator considers that the breaches are related, to address all of the related breaches of a Limit in a single Mitigation Plan. An example of this could be where a breach of the Limit for surface access is considered to be linked to the breach of a Limit for air quality, and the mitigation that the airport operator would bring forward to reduce non-sustainable mode share would also be effective in improving air quality (through fewer airport-related vehicles on the road).

- 2.2.24 Similarly, where a Level 2 Threshold and Limit for the same environmental topic have been exceeded and breached respectively (for example, the exceedance of a Level 2 Threshold for passenger mode share and a breach of a Limit for staff mode share) the production of a combined Mitigation Plan can also discharge the separate requirement to produce a Level 2 Plan for the exceedance of the Level 2 Threshold (as set out above), at the discretion of the airport operator. This is to ensure the efficiency of the process, and in recognition of the fact that both plans would likely contain similar types of mitigation measures in this situation.
- 2.2.25 A draft Mitigation Plan should be prepared by the airport operator and submitted to the ESG no later than 21 days after submission of the Monitoring Report to ESG (unless a longer period is agreed with the ESG), and the airport operator may submit it alongside a Monitoring Report showing exceedance of the Limit(s).
- 2.2.26 When the breach of a Limit has occurred, unless otherwise agreed by the ESG, the airport operator will not increase declared hourly runway capacity above the existing capacity declaration and nor should any additional slots be allocated (above the existing number of allocated slots) until monitoring confirms the relevant environmental effect has fallen below the relevant Limit.

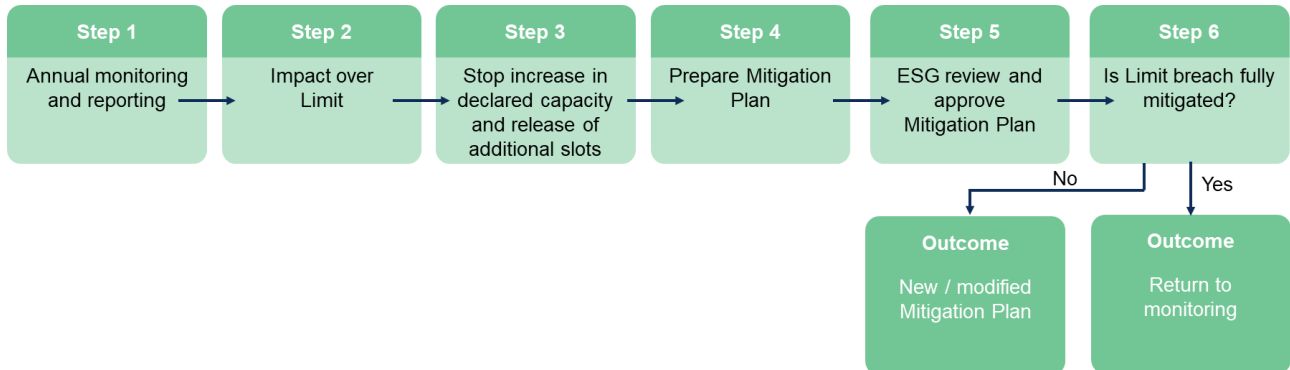
Figure 2.6: Actions above a Limit



- 2.2.27 A Mitigation Plan will need to set out the airport operator’s plan for bringing the environmental effect(s) back below the Limit, within as short a timeframe as is considered reasonably practicable. The Mitigation Plan must include analysis to demonstrate that this will be the case and include a programme for the

implementation of any required mitigation. The mitigation will subsequently need to be delivered according to these timescales.

Figure 2.7: Proposed approach to Mitigation Plans



- 2.2.28 If, in the reasonable opinion of ESG (as informed by the Technical Panels) a draft Mitigation Plan is not likely to satisfactorily address a breach of the GCG Limits, the ESG may request reasonable modifications to be made to the airport operator’s plans. The ESG must then approve or refuse the Mitigation Plan, with written reasons for the decision required to be provided to the airport operator. Where a decision is not made in writing within the specified 28 day period, the Mitigation Plan will be deemed to be approved. The ESG’s decision is subject to any appeal that the airport operator may make, as set out in Paragraph 2.2.49. However, refusal of a Mitigation Plan should not prevent the operator from implementing any mitigation they deem to be appropriate in the interests of reducing environmental effects as quickly as possible.
- 2.2.29 Mitigation must be implemented by the airport operator in accordance with the approved Mitigation Plan.
- 2.2.30 The Mitigation Plan could apply for a period greater than one year. Where a Mitigation Plan put forward by the airport operator has not been effective within the timescales set out within the approved Mitigation Plan, the airport operator must prepare and submit a new Mitigation Plan, following the same process as previously. This new Mitigation Plan must consider whether implementation of a local rule (see Section 2.6) would reduce, avoid or prevent an exceedance of a limit, and where this is the case, should include a description of the local rule and the steps the operator is taking to introduce that local rule in accordance with regulations. This requirement does not preclude the airport operator from bringing forward a local rule to mitigate an environmental impact at any other time the airport operator considers to be appropriate.
- 2.2.31 The approach to Mitigation Plans when an environmental effect has exceeded a Limit is captured in Paragraph 24 of Schedule 2 to the **DCO [TR020001/APP/2.01]**.
- 2.2.32 The airport operator’s compliance with approved Level 2 Plans or Mitigation Plans will be assessed by the ESG, including whether interventions have been implemented as proposed.

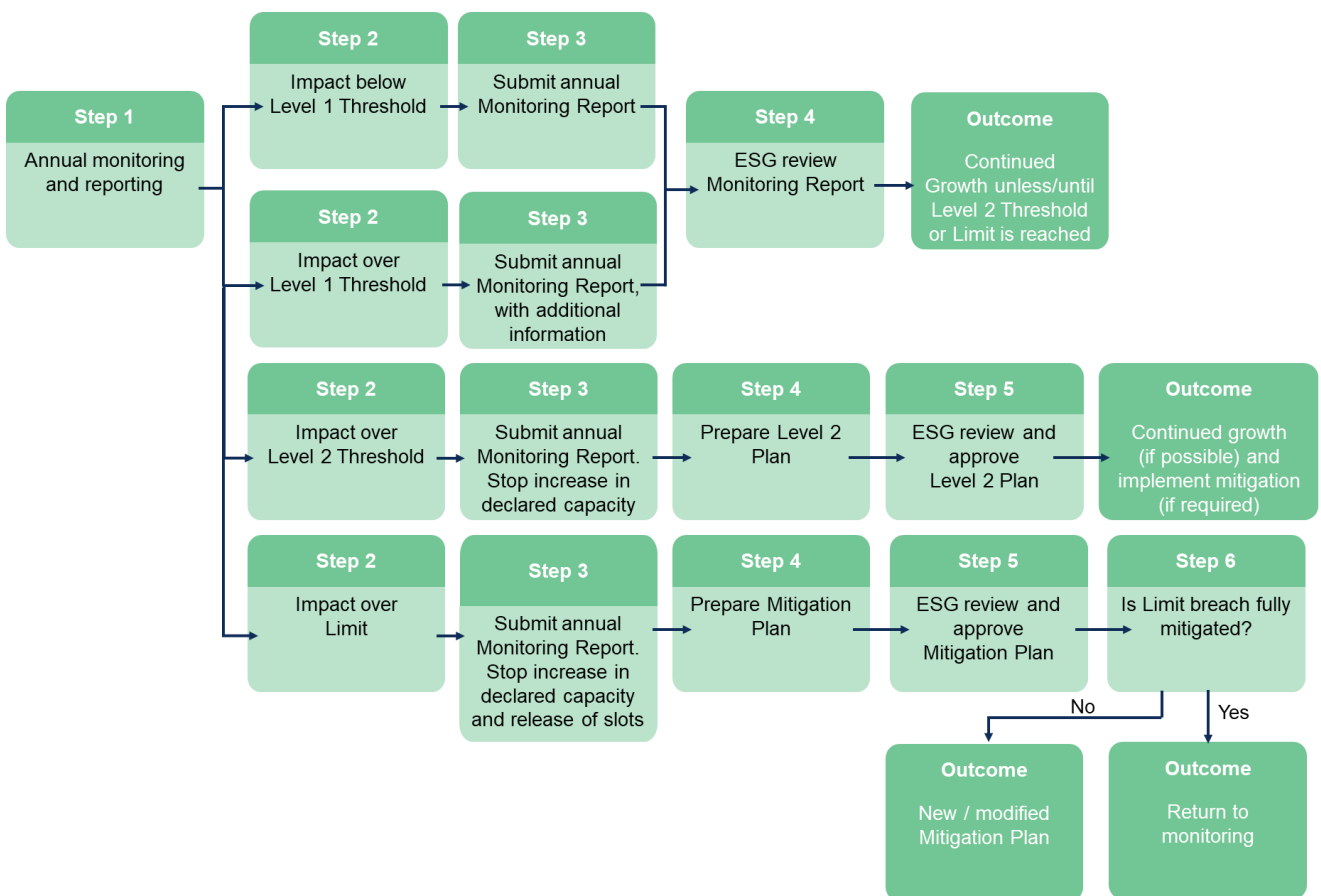
2.2.33 In some circumstances, the airport operator may feel that the most appropriate way of addressing a breach of a Limit is through a planned capacity reduction. Section 2.6 sets out the way in which this can be done under current legislation governing the allocation of slots at airports.

2.2.34 There may also be some circumstances where the airport operator wishes to make a case that growth at the airport should continue when a Level 2 Threshold or Limit has been exceeded, potentially subject to the delivery of or contribution to a particular piece of mitigation.

2.2.35 An example of this is where delivery of necessary mitigation is not solely within the control of the airport operator. In this situation, subject to the airport operator making an appropriate contribution, agreed with the ESG, towards an agreed form of mitigation, they could continue to increase capacity and new slots could be allocated. For example, this approach could be used if airport-related traffic has been found to make a small contribution towards the breach of UK legal air quality limits, notwithstanding that this contribution is sufficient to trigger the GCG process. In this case, mitigation could be delivered by a third-party and funded by multiple sources including a proportionate contribution from the airport operator agreed with the ESG via the approval process for a Level 2 Plan or Mitigation Plan.

2.2.36 The total GCG process is shown in [Figure 2.8](#).

Figure 2.8: Proposed GCG approach



Circumstances beyond the control of the airport operator

- 2.2.37 It must be recognised that the exceedance of a Threshold or Limit could, on occasion, occur as a result of circumstances beyond the control of the airport operator. The airport operator will be responsible for identifying where this is considered to be the case, and as part of the relevant Monitoring Report will need to include evidence to this effect.
- 2.2.38 Monitoring results will initially be submitted to the relevant Technical Panels for review (see Section 2.3). Any evidence linking the exceedance of a Threshold or the breach of a Limit to circumstances beyond the control of the airport operator will be reviewed by the relevant Technical Panel. Where the Technical Panel does not feel that sufficient evidence has been provided that an exceedance or breach is linked to factors beyond the operator's control, they will respond on this basis to the airport operator and allow them to consider whether to update the relevant Monitoring Report prior to its submission to the ESG.
- 2.2.39 Generally, where the airport operator puts forward a case that the exceedance of a Threshold or breach of a Limit is due to circumstances beyond their control, they will be expected to demonstrate that the circumstances were:
- a. not permanent in nature;
 - b. outside of the control or influence of the airport operator; and
 - c. directly related to the measured exceedance of a Threshold or breach of a Limit.
- 2.2.40 Indicative examples of circumstances where these criteria could apply are listed in Paragraphs 2.2.42 and 2.2.43.
- 2.2.41 Where the airport operator can demonstrate to the ESG that all the criteria in Paragraph 2.2.39 are met, the ESG, acting reasonably, should certify that the exceedance of a Threshold or breach of a Limit is due to circumstances beyond the operator's control. Where the ESG has provided this certification, no new Level 2 Plan or Mitigation Plan (as appropriate) will be required for that exceedance and the ESG should treat the relevant environmental topic as if no exceedance had occurred.
- 2.2.42 In developing the GCG Framework, consideration has been given to the list of dispensations published by the Department for Transport (Ref 2.1), that sets out circumstances in which flights can be disregarded for the purposes of noise restrictions. These include:
- a. delayed aircraft which are likely to lead to serious congestion at the aerodrome or serious hardship or suffering to passengers or animals;
 - b. delayed aircraft resulting from widespread and prolonged disruption of air traffic;
 - c. movements for reasons classified as emergencies consisting of an immediate danger to life or health, whether human or animal; and

- d. any other reason as specified by the Secretary of State from time to time under section 78(4) or 78(5)(f) of the Civil Aviation Act 1982 or set out in guidance published by the Secretary of State in connection with those provisions (Ref 2.1).

2.2.43 GCG has built on these and it is believed that illustratively, other circumstances which could meet the criteria set out in Paragraph 2.2.39 include:

- a. pandemics or epidemics such as Covid-19;
- b. grounding of specific aircraft (e.g. Boeing 737 MAX) impacting noise performance;
- c. strikes by public transport operators, or significant engineering work / other disruption to public transport services leading to more car use, in turn leading to impacts on air quality, greenhouse gases or surface access;
- d. significantly abnormal weather conditions leading to restricted ability to generate solar power impacting greenhouse gases, or leading to dust storms / ash clouds impacting on air quality; and
- e. road works or other construction activity (except where this is work carried out by the airport operator or another organisation working on their behalf) leading to additional delay or diversions on the highway network, impacting on air quality.

Transition period

2.2.44 It should be acknowledged that the GCG Framework is unique for major infrastructure projects and requires the airport operator to undertake a number of actions and processes that are not yet established. These include:

- a. the establishment of the ESG and Technical Panels;
- b. undertaking new air quality monitoring, with the airport operator directly monitoring air quality impacts at 15 off-airport locations, each of which will require the installation of new air quality monitoring equipment;
- c. a revised approach to monitoring and reporting of greenhouse gas emissions;
- d. a revised approach to surveying and reporting of staff travel to and from the airport; and
- e. the process of public meetings, reporting monitoring data to a Technical Panel and subsequently in a Monitoring Report to the ESG.

2.2.45 It is however important to draw a distinction between noise impacts and the other environmental topics within scope of GCG. This is because:

- a. Existing planning controls exist in relation to noise, and the Transition Period could therefore create a theoretical gap in noise controls, notwithstanding that breaching noise Limits during the Transition Period would not be in the interest of the airport operator. There are no equivalent existing planning controls for other GCG topics.

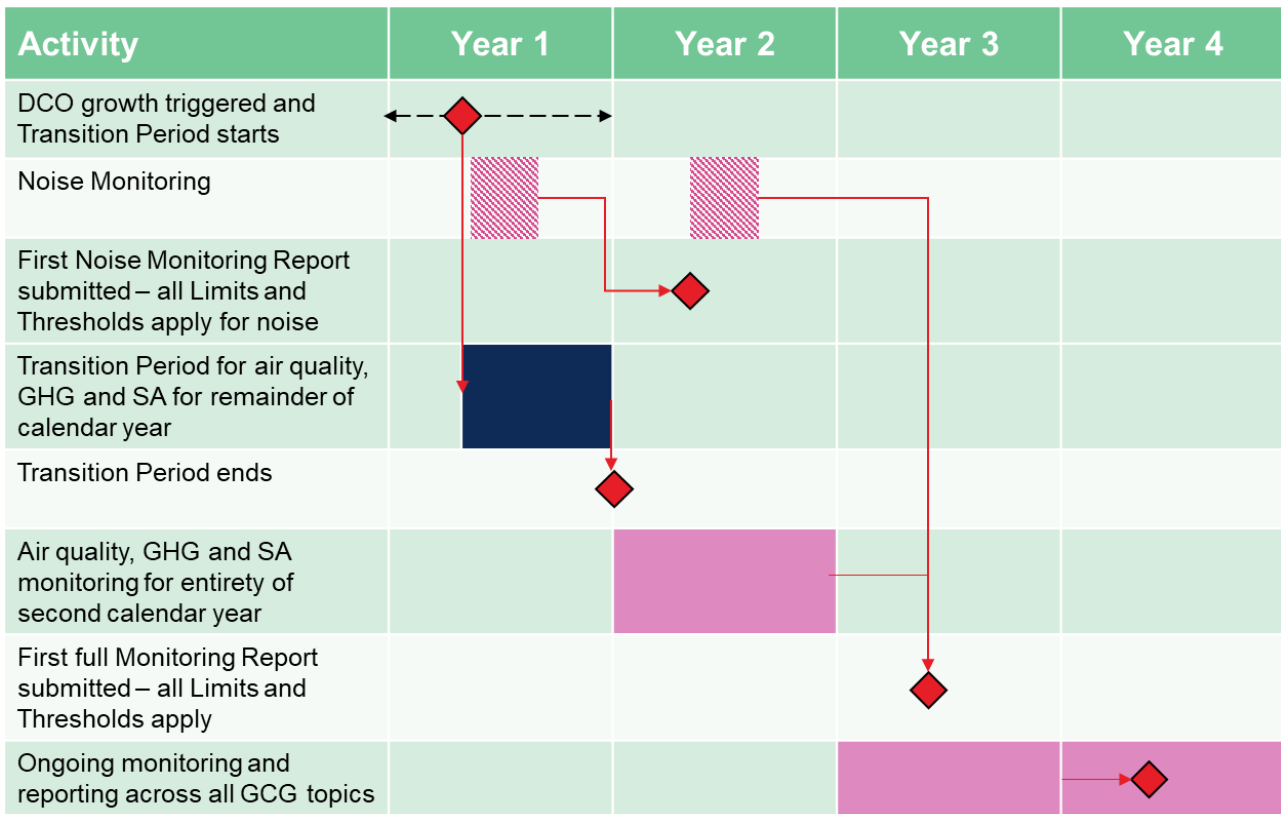
- b. There are existing planning controls in relation to noise, and as such the monitoring and reporting process in this area is well established. This established process has been used as the basis for the **Aircraft Noise Monitoring Plan** at **Appendix C** of the **GCG Framework [TR020001/APP/7.08]**. This noise monitoring will be undertaken for the purposes of compliance with existing planning conditions prior to notice being served under Article 44(1) of the **DCO [TR020001/APP/2.01]**. There are no equivalent established requirements to monitor and report on environmental impacts for other GCG topics, all of which will require new monitoring processes to be implemented to some extent.
- c. The Noise Envelope sets Limits and Thresholds over a defined 92-day summer period, rather than requiring data collection over a full calendar year. There is therefore greater scope to apply the GCG process to noise 'in year', rather than needing to wait for the start of the next calendar year to commence monitoring.

2.2.46 On this basis, it is proposed that no Transition Period will apply for aircraft noise. When notice under Article 44(1) is served by the airport operator and existing planning conditions cease to apply, the GCG process will apply in full (including Level 2 Thresholds and Limits) to noise in that year, even if notice is served beyond the end of the 92-day summertime period. This will mean that the ESG and, as a minimum, the Noise Technical Panel will have to be established in time for noise monitoring to be presented in a Monitoring Report in the year following notice being served.

2.2.47 However, a Transition Period will apply for air quality, greenhouse gases and surface access. This will last for the remainder of the calendar year in which notice under Article 44(1) of the **DCO [TR020001/APP/2.01]** is served. During this period there will be no requirement to carry out monitoring as for these environmental topics monitoring will need to be carried out over a full calendar year. The GCG process will apply in full from 1 January following service of notice under Article 44(1), with monitoring in accordance with approved Monitoring Plans commencing at this point and a Monitoring Report being submitted the following year. At this point, all Limits and Thresholds will apply. This approach will also allow the airport operator time to implement the new monitoring processes required in these areas, where no established monitoring processes pursuant to planning controls exist. The Transition Period will therefore align with the annual cycle of monitoring and reporting required by the GCG Framework.

2.2.48 An indicative timeline for the Transition Period is set out in [Figure 2.9](#)~~Figure 2.9~~.

Figure 2.9: Indicative timeline for the Transition Period



Right of appeal

2.2.49 The airport operator would have a right to appeal to the Secretary of State for Transport against any decisions made by the ESG, for example a decision not to approve a Level 2 Plan or Mitigation Plan, or not to certify that an exceedance of a Threshold or breach of a Limit was a result of circumstances beyond the control of the airport operator. Where a Level 2 Plan or Mitigation Plan has been refused by the ESG, an updated plan must be resubmitted to the ESG within the timeframes set out in the **DCO [TR020001/APP/2.01]** which responds to the reasons for refusal provided by the ESG.

Ensuring GCG remains relevant over time

2.2.50 In order to ensure that GCG remains relevant over time, Paragraph 25 of Schedule 2 of the **DCO [TR020001/APP/2.01]** sets out that the GCG process should be reviewed periodically by the airport operator. The first such review must be undertaken no later than three years from the date notice is served under Article 44(1) of the DCO, and then on a five-yearly basis from this point.

2.2.51 The review should identify whether any improvements to the GCG process could be made and, where this is the case, this should be summarised in a report to be submitted to the ESG for comment. This should include improvements to process (including consideration and where reasonably practicable incorporation of new and emerging best practice in monitoring techniques) or modifications to time periods. This review should also consider whether the funding made available to ESG and Technical Panel members

secured through a separate legal agreement (as noted in Paragraph 2.4.7) is sufficient to cover the costs of their involvement. Following such a review the airport operator may apply to the ESG to modify any of the specified time periods in Part 3 of Schedule 2 to the DCO where it considers it necessary for the effective implementation of the GCG process.

- 2.2.52 As outlined in Section 3.1, in setting Limits and Thresholds it has been sought to align the approach for GCG with the quantitative forecasts included in the **Environmental Statement [TR020001/APP/5.01]** submitted with the application for development consent. In line with the requirements for EIA, GCG therefore reflects assumptions around reasonably foreseeable changes to aspects of the assessment such as aircraft technology, rate of uptake of electric vehicles and decarbonisation of the UK electricity grid, particularly in response to government policy such as the Transport Decarbonisation Plan and the Jet Zero Strategy.
- 2.2.53 GCG has built in mechanisms to ensure that as circumstances change in future, GCG can capture these changes. This approach is different across the different environmental topics within GCG, responding to how Limits in these areas have been derived.
- 2.2.54 For aircraft noise, the Noise Envelope (Section 3.2) includes a requirement to review noise performance every five years, and to review noise limits in response to airspace change (either promoted by the airport operator or in response to a CAA request to optimise overall airspace design in the SE of England), or the publication of a new ICAO chapter².
- 2.2.55 For air quality, a requirement has been included to periodically check concentrations of pollutants against the forecasts and have also included a commitment to review GCG Limits should the UK legal limits change in future. This is included in Section 3.3.
- 2.2.56 For GHGs, it is proposed that the Limits set out in Section 3.3.36 will remain in force in the medium term up to 2040. However, the Applicant is committed to meeting the Jet Zero Strategy policy ambition for airport operations to be zero emissions from 2040, and through GCG, the airport will deliver the Luton Rising Net Zero Strategy commitment for surface access to be carbon neutral from the same date.
- 2.2.57 Finally, for surface access there is a provision to allow for the review of the definitions of the surface access mode share Limits if new modes of transport are used at the airport in the future (for example, autonomous vehicles). Additionally, there is also a separate commitment through the **Framework Travel Plan [TR020001/APP/7.13]** to set surface access Targets as part of a refreshed Travel Plan every five years. These targets will be based on past surface access performance, driving continuous improvement in this area.

² This refers to ICAO Annex 16 Volume I, a document that contains international aircraft noise standards. The current Chapter 14 noise standard applies to newly-designed high-weight aircraft entering service from 2017 and for lower weight aircraft entering service from 2020.

- 2.2.58 There will be no ability to change any of the Level 1, Level 2 Thresholds or Limits to permit materially worse environmental effects than those identified in the Environmental Statement. This ensures that GCG can operate effectively over time and the reasonable worst case environmental effects forecast through the EIA process will not be exceeded.
- 2.2.59 To avoid multiple reviews of the GCG process, Limits and Thresholds happening during the initial stages of growth, where any of the topic-specific reviews referenced in Paragraphs 2.2.54 to 2.2.57 are triggered ahead of the first GCG process review referenced in Paragraph 2.2.50, the topic-specific review(s) will be incorporated into this first process review, notwithstanding any timescales for the review to take place that would otherwise apply.

2.3 Monitoring and reporting

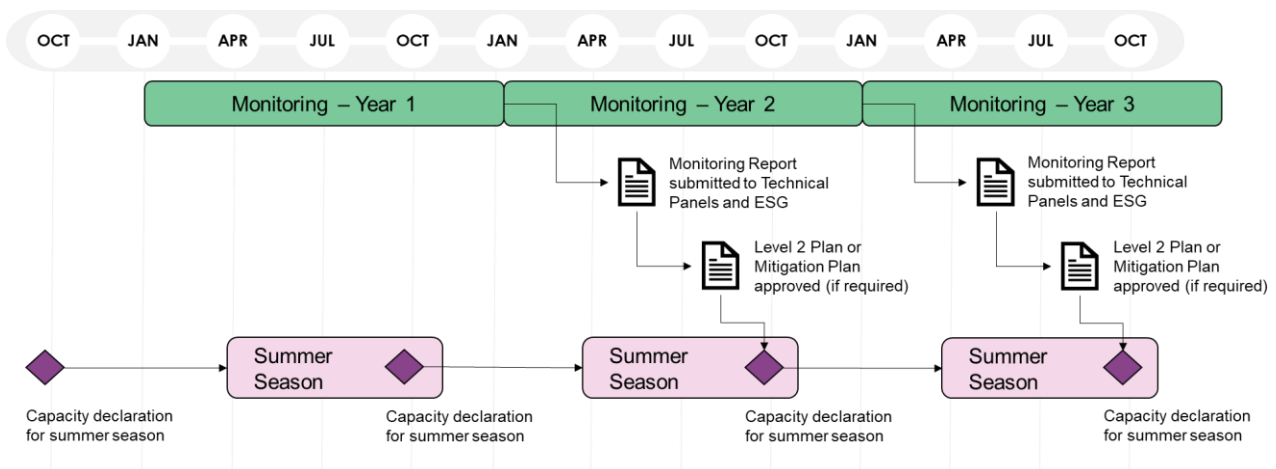
- 2.3.1 The airport operator will be required by the GCG Framework to carry out annual monitoring of the airport's environmental effects to enable oversight of the airport's performance against the GCG Limits.
- 2.3.2 Included at **Appendices C to F** of the **GCG Framework [TR020001/APP/7.08]** are Monitoring Plans for each GCG topic, setting out in detail the methodology for monitoring and reporting effects in each area. This includes how, where, and when the data needed to verify the airport's performance against the Limits will be collected, analysed, and reported.
- 2.3.3 The Monitoring Plans included with this document set out the monitoring required to demonstrate compliance with the GCG Framework. The airport operator will also undertake other monitoring of environmental impacts (for example, for compliance with the Travel Plan), which could also be reported in a combined Monitoring Report at the airport operator's discretion.
- 2.3.4 The airport operator should make underlying monitoring data available to the ESG or Technical Panel at their reasonable request on a confidential basis to ensure transparency and compliance with the approved Monitoring Plans.
- 2.3.5 A Monitoring Plan may in future be changed or updated if mutually agreed by the airport operator and ESG, for example in response to new data collection technology being made available. Monitoring Plans should also be reviewed as part of the periodic review of the GCG process outlined in Paragraph 2.2.50.
- 2.3.6 A Monitoring Report must be compiled and submitted annually to the ESG, including the content defined by the Monitoring Plans, to be submitted by no later than 31 July to the ESG (unless otherwise agreed), covering the preceding calendar year. As per the Monitoring Plans included at **Appendices C to F** of the **GCG Framework [TR020001/APP/7.08]**, the Monitoring Report must also include the total number of Air Traffic Movements (ATMs), the total commercial passenger throughput for the preceding calendar year (corresponding to the period covered by the Monitoring Report), and the Limits and Thresholds used for that year (i.e. Phase 1 Limit, Phase 2a Limit etc).
- 2.3.7 The monitoring results for the individual environmental topics that inform the Monitoring Report must be submitted to the relevant Technical Panels prior to

the submission of the Monitoring Report to the ESG as soon as reasonably practicable, and no later than 30 June. Topic-specific monitoring results will then be combined into a single, compiled Monitoring Report to be submitted to ESG.

2.3.8 The airport operator must make the Monitoring Report available to the general public as soon as reasonably practicable following submission to the ESG, to ensure that monitoring is transparently reported in a way that can be readily interpreted to support effective decision making and maintain trust.

2.3.9 The key date for managing future growth at the airport, based on the outcomes of monitoring, is the deadline for the following summer season’s capacity declaration at the end of September. The GCG Framework has been structured to minimise the potential lag between environmental effects being monitored throughout a calendar year, a breach being then being identified, and action being taken to manage future capacity where required, noting the constraints around the timings for future slot allocation. This relationship is shown in [Figure 2.10](#). Based on the availability of monitoring results, it is evident that performance against the Limits in one calendar year cannot inform the capacity declaration for the following year; rather the minimum lag is two summer seasons.

Figure 2.10: Links between monitoring, reporting and summer season capacity declaration



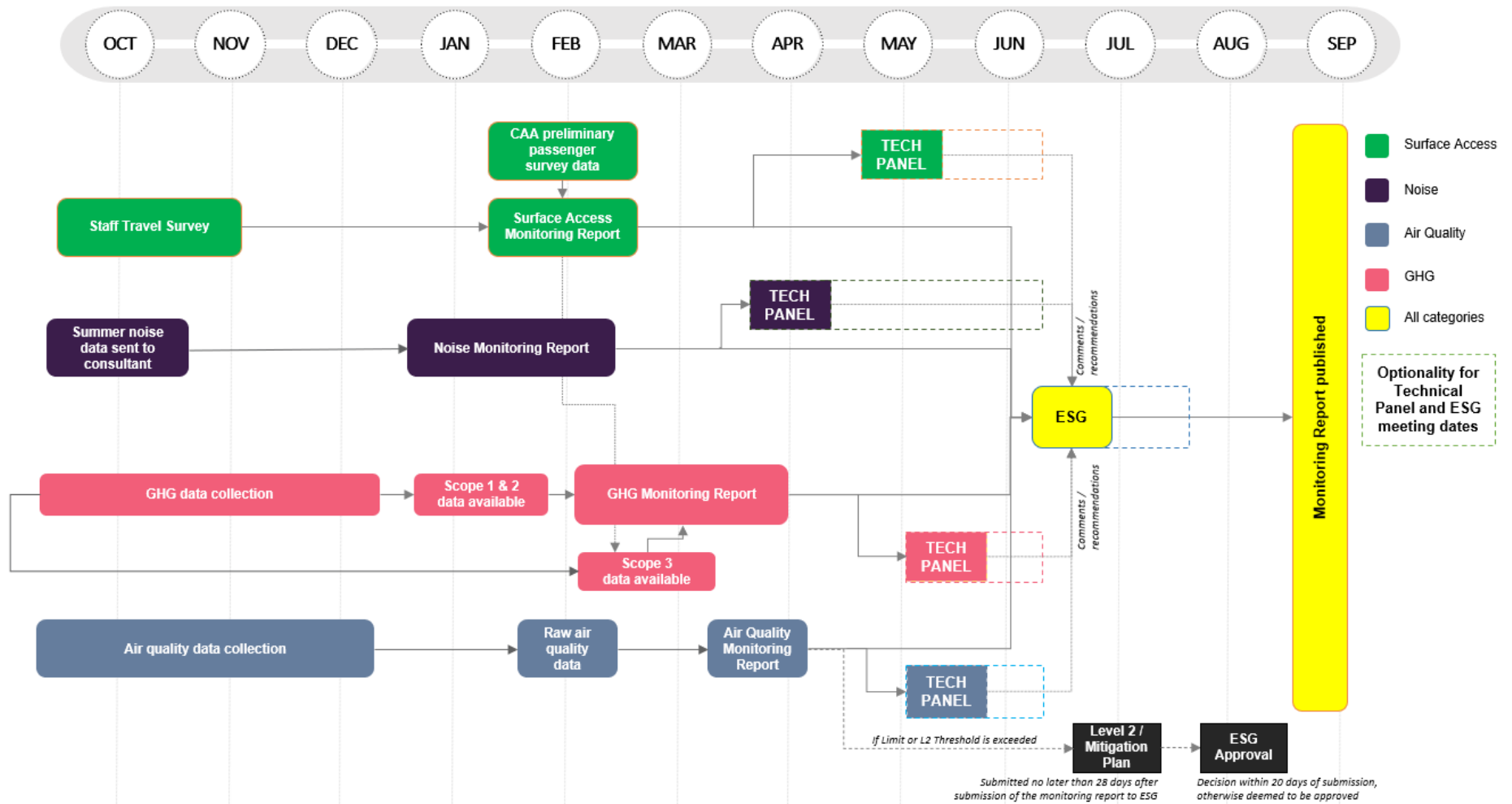
2.3.10 An outline timeline for annual monitoring and reporting is set out in [Figure 2.11](#). The timing of the required submission of the Monitoring Report to the ESG is largely driven by the availability of the underlying monitoring data, which is available at different times of the year for each topic. For aircraft noise and the staff travel survey, it will be collected before the end of the calendar year. However, for monitoring results that are collected across a complete calendar year (i.e. air quality, GHG emissions, passenger surface access), there is then a period of time required to collate/receive and process the data.

2.3.11 The intention therefore is for each of the Technical Panels to be engaged at separate times to review monitoring results (dependent on availability of data), to then feed into a single submission of the Monitoring Report, covering all four environmental topics, by 31 July each year. This allows a period of approximately two months for any issues with monitoring to be resolved, or a

Level 2 Plan or Mitigation Plan to be approved, prior to the deadline for the following summer season's capacity declaration at the end of September.

- 2.3.12 The airport operator is encouraged to raise any potential issues with the Technical Panels prior to the formal submission of the Monitoring Report to ESG, to allow issues to be resolved in a timely manner. Similarly, where it is clear that a Level 2 Plan or Mitigation Plan will be required, where possible, the draft plan should be presented to the Technical Panels alongside the monitoring results and subsequently submitted to the ESG alongside the Monitoring Report.
- 2.3.13 The Terms of Reference at **Appendices A and B** of the **GCG Framework [TR020001/APP/7.08]** set out the specific timing requirements for the Technical Panels and ESG to meet, provide comment and make decisions on the plans and reports submitted to them by the airport operator.

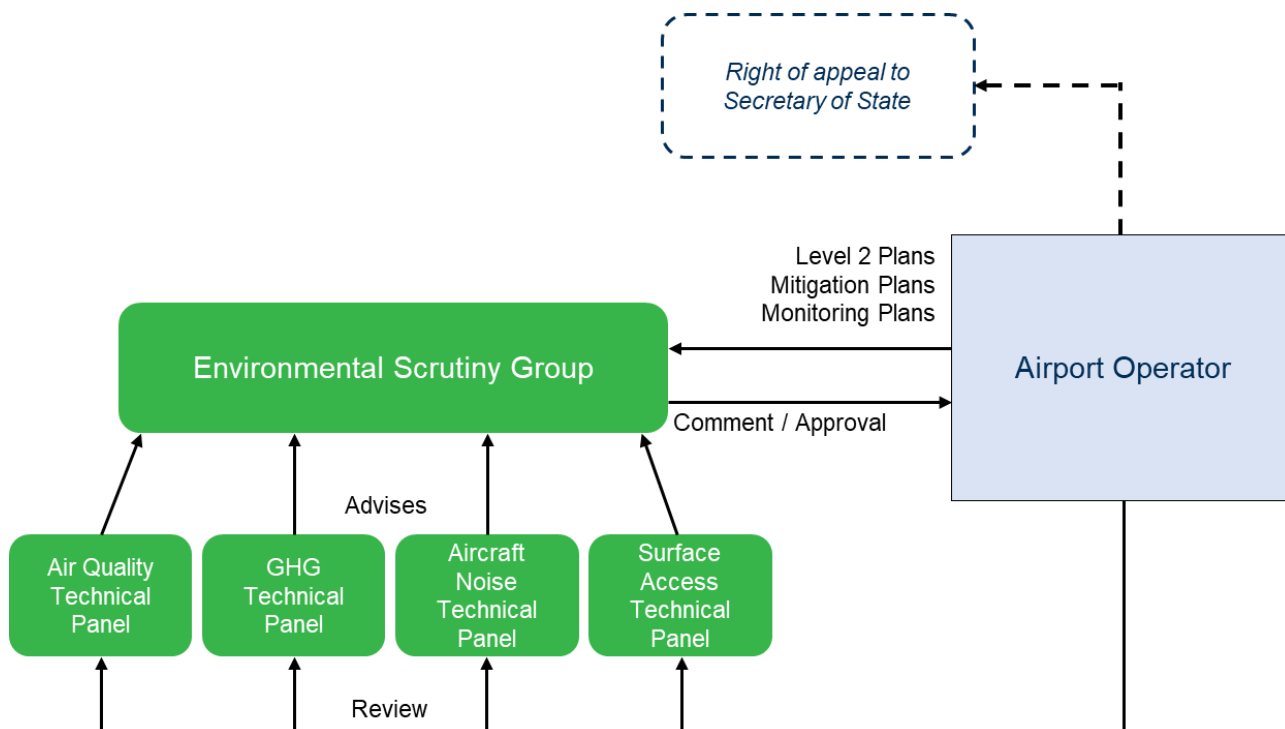
Figure 2.11: Outline timeline for annual monitoring and reporting



2.4 Independent scrutiny and review

- 2.4.1 Effective scrutiny and review of the environmental effects of the expanding airport, combined with robust governance, is fundamental in making the GCG Framework effective.
- 2.4.2 At the heart of GCG governance will be a new body established through the DCO, the Environmental Scrutiny Group. It is proposed that the ESG will be established as a company limited by guarantee. Supplementing the standard approach to the discharge of DCO requirements and enforcement, the ESG will have the following powers to exercise at its discretion, enshrined through Terms of Reference included at **Appendix A** of the **GCG Framework [TR020001/APP/7.08]**:
- a. Providing commentary on periodic Monitoring Reports produced by the airport operator (see Section 2.3) following reviews by the relevant Technical Panels;
 - b. Approving or refusing Level 2 Plans or Mitigation Plans put forward as required by the airport operator if any GCG environmental effect has exceeded a Level 2 Threshold or Limit respectively (see Section 2.2);
 - c. Where the airport operator can demonstrate that this is the case, certifying that an exceedance of a Level 2 Threshold or Limit is due to circumstances beyond the operator's control;
 - d. Forum for consideration of statutory enforcement representations;
 - e. Mutually agreeing to modifications to the Terms of Reference included at **Appendices A and B** and Monitoring Plans included at **Appendices C to F** of the **GCG Framework [TR020001/APP/7.08]**;
 - f. Approving or refusing applications by the airport operator to modify timescales within the GCG process, or Level 1 Thresholds, Level 2 Thresholds or Limits, as allowed for under Paragraph 25 of **Schedule 2** to the **DCO [TR020001/APP/2.01]**.
- 2.4.3 Where the ESG refuses any plans or applications put forward by the airport operator, it must provide written reasons for withholding approval. The detailed requirements are set out in the ESG Terms of Reference.
- 2.4.4 In exercising these powers and functions, the ESG will be supported by four new Technical Panels, one for each of the environmental topics covered by GCG. The proposed membership of the Technical Panels is described in Paragraph 2.4.19 below, with Terms of Reference for these Technical Panels included at **Appendix B** of the **GCG Framework [TR020001/APP/7.08]**. The Technical Panels will provide technical expertise to ESG in interpreting monitoring results and determining the suitability and effectiveness of Level 2 Plans and Mitigation Plans put forward by the airport operator.
- 2.4.5 The bodies and processes described above which form the core architecture of GCG are summarised in the diagram in [Figure 2.12](#).

Figure 2.12: Proposed governance arrangements within the GCG Framework



2.4.6 The ongoing reasonable and properly incurred and evidenced costs of the ESG and the Technical Panels will be funded by the airport operator. The airport operator will also fund the chair and independent specialist on aviation that sits on the ESG (see Paragraphs 2.4.9 and 2.4.11), as well as the independent technical experts that sit on each Technical Panel (see Paragraph 2.4.30). Additionally, the airport operator will fund the organisation of the community engagement meetings for each environmental topic (see Section 2.5).

2.4.7 The reasonable costs of the involvement of the local authority representatives in the ESG and Technical Panels will be funded by the Applicant. This will include time and/or professional fees and travel to and from ESG meetings. These costs will be payable in accordance with the funding arrangements set out in a separate legal agreement and will be periodically reviewed as set out in Paragraph 2.2.51.

2.4.8 The airport operator will be required to manage the governance and administration of the ESG and Technical Panels, including production of meeting packs and minutes for meetings. Full details of the cost recovery for representatives of the ESG and the Technical Panels are included in the ESG and Technical Panel Terms of Reference at **Appendices A and B** respectively of the **GCG Framework [TR020001/APP/7.08]**.

Environmental Scrutiny Group

2.4.9 The ESG is intended to be a streamlined, independent governance body with a specific remit to exercise the functions listed in Paragraph 2.4.2. It is required to be established by the airport operator no later than 56 days prior to the due date of the submission of the first Monitoring Report. When the ESG makes

decisions on approvals or refusals, it will formally be the body which is making such decisions, but the decisions are made on the basis of the terms of reference.

- 2.4.10 The ESG will have an independent chair, who will be required to have experience of the aviation industry. It is proposed that the independent chair will initially be nominated by the airport operator, following consultation with the Applicant, and appointed by the Secretary of State. The appointment process for the initial and any subsequent Chairpersons is set out fully in the Terms of Reference at **Appendix A** of the **GCG Framework [TR020001/APP/7.08]**.
- 2.4.11 Whilst the Applicant does not believe it is appropriate for the airport operator or individual airlines operating at the airport to have a role on ESG, it is recognised that there is merit in having suitable expertise related to how airports are operated, including the specific legislation with which they must comply, which would otherwise not be available to the remaining members.
- 2.4.12 The ESG will therefore also include an independent specialist on aviation as well as a slot allocation expert, with the appointment process set out in the ESG Terms of Reference. This could be an individual or a representative of an organisation with proven expertise in slot management regulations. These independent specialists will provide the ESG with impartial advice on airport operations, including the existing legislation for the management of capacity and slots at the airport, as discussed in Section 2.6. The capacity declaration and slot allocation process is fundamental to how growth at the airport is brought forward and managed, and so having the necessary expertise in this specialist field through the slot allocation expert within ESG will be essential for setting out the interaction between growth, including its associated control mechanisms, and environmental impacts.
- 2.4.13 The Applicant believes it is important for the ESG to include representatives of local authorities to ensure that the views of those authorities that are impacted across the whole range of environmental topics within the scope of GCG are captured. The Applicant believes that a role on the ESG in this case is proportionate and relevant, but where a local authority is only forecast to experience impacts in one area a role on the relevant Technical Panel would be more appropriate.
- 2.4.14 In this way an appropriate balance can be found between the need to capture a diversity of views with the relevance of those views, the cost of administering the GCG process (both for local authorities and for the airport operator) and the need to keep a focused group of authorities in support of the ESG's decision making role. On that basis, it is proposed that the following local authorities should be represented on the ESG:
- a. Central Bedfordshire Council
 - b. Hertfordshire County Council
 - c. Luton Borough Council
 - d. North Hertfordshire District Council

- 2.4.15 The representatives of the local authorities on ESG should be competent officers working within the relevant local authorities. Planning professionals have the relevant experience of considering reports from technical specialists and using these to support a decision-making function through deciding planning proposals, which is similar in concept to the function of the ESG. The requirement for officers will also help ensure that any decisions made by the ESG are made on an impartial, apolitical basis.
- 2.4.16 Through statutory consultation and other stakeholder engagement, the Applicant has also received a number of suggestions as to other Government and industry organisations that could bring value to the functioning of ESG. The Applicant has approached all of these bodies, and where they have indicated that a role on the ESG would be compatible with their remit they have been included in the proposals. A number of the suggested bodies however, such as the Office for Environmental Protection, have declined the opportunity to have a position on the ESG. Further details of the engagement with suggested bodies and organisations can be found in the **Consultation Report [TR020001/APP/6.01]**.
- 2.4.17 The Environmental Scrutiny Group will therefore be established with the following members:
- a. Independent Chair
 - b. Independent Aviation Expert
 - c. Central Bedfordshire Council
 - d. Hertfordshire County Council
 - e. Luton Borough Council
 - f. North Hertfordshire District Council
 - g. Slot Allocation Expert
- 2.4.18 Paragraph 20 of **Schedule 2** to the **DCO [TR020001/APP/2.01]** secures the approach to the establishment of the Environmental Scrutiny Group and how it will subsequently operate. Further details as to its operating processes are set out in the Terms of Reference in **Appendix A** of the **GCG Framework [TR020001/APP/7.08]**, including the process for including additional members.
- Technical Panels***
- 2.4.19 As set out in Paragraph 2.4.4, the role of the Technical Panels will be to review information submitted by the airport operator (monitoring results, Level 2 Plans, Mitigation Plans) and, where necessary, providing comment and recommendations to the ESG. It is not intended that the Technical Panels will have a decision-making function, and where there are conflicting views which mean the panel cannot agree on a joint recommendation, these will be recorded as part of the overall recommendation provided to ESG.
- 2.4.20 To support this technically focused function, it is proposed that membership of each Technical Panel should be offered to public bodies that:
- a. Have a responsibility for managing the relevant impact on the public; and

- b. Are forecast to experience the relevant environmental effect as a result of the Proposed Development.

- 2.4.21 For the Noise Technical Panel, the Applicant has had regard to the forecast shape of the 54dB_{L_{Aeq,16h}} and 48dB_{L_{Aeq,8h}} noise contours, discussed in Section 3.2 as forming the basis of the GCG noise contour Limits. These forecast noise contours show impacts extending to Luton, Central Bedfordshire, Dacorum, North Hertfordshire and Stevenage.
- 2.4.22 Responsibility for managing noise impacts on residents falls within the environmental health remit of local authorities, and therefore where a two-tier rather than unitary council structure exists (e.g. Dacorum, North Hertfordshire and Stevenage within Hertfordshire) responsibility sits with the district authority. Local authority representation on the Noise Technical Panel has been determined on this basis.
- 2.4.23 The Civil Aviation Authority (CAA) also has both a regulatory and advisory role on managing impacts of aviation noise. This includes managing airspace change, supporting departments across the UK Government and devolved administrations to take informed decisions on aviation noise policy, and promoting best practice around noise in the aviation sector. On that basis, the CAA will also be invited to take up a role on the Noise Technical Panel.
- 2.4.24 To reflect the potential for future changes to the size and shape of the noise contours, for example as a result of airspace change proposals, a review of the membership of the Noise Technical Panel will take place as part of the Noise Limit Review to ensure it continues to reflect those local authorities experiencing noise impacts. This review process is described further in paragraphs 3.2.36 – 3.2.43.
- 2.4.25 Section 3.3 of this document sets out a shortlist of monitoring locations for air quality impacts as a result of expansion (shown on [Figure 3.8](#)~~Figure 3.8~~). These locations are in Luton, Central Bedfordshire and North Hertfordshire. As with noise, responsibility for managing air quality impacts is part of the environmental health remit of councils, and therefore it is proposed that Luton Borough Council, Central Bedfordshire Council and North Hertfordshire District Council will be invited to take up roles on the Air Quality Technical Panel.
- 2.4.26 For greenhouse gas emissions, a role on the Greenhouse Gases Technical Panel will be offered to each of the four authorities with a role on ESG (Central Bedfordshire, Hertfordshire, Luton and North Hertfordshire). This is on the basis that the effects of climate change are not location specific.
- 2.4.27 For surface access, the **Transport Assessment [TR020001/APP/7.02]** sets out forecast highways impacts as a result of the expansion. From the conclusions of this assessment, a role on the Surface Access Technical Panel will be offered to National Highways (as strategic highway authority for the M1) and Central Bedfordshire Council, Hertfordshire County Council and Luton Borough Council as the relevant highway authorities for affected local roads around the airport.

- 2.4.28 In addition, the Applicant believes it would be appropriate for the Surface Access Technical Panel to have a mechanism to capture advice from public transport operators at the airport. There are a number of rail, bus and coach operators at the airport today, and these operators participate in the Luton Airport Transport Forum (ATF), which was established in 2017. As such, it is proposed that the ATF should nominate a representative who will also participate in the Surface Access Technical Panel.
- 2.4.29 Whilst the organisations listed above will be invited to form part of each Technical Panel, it is believed that to fulfil their technically-focused remit it is important that an organisation is able to nominate a representative that has suitable technical expertise to fill its role. The technical experience and qualifications required for a role on the Technical Panel are set out in the Terms of Reference at **Appendix B** of the **GCG Framework [TR020001/APP/7.08]**, and each nominee will be subject to agreement with the Chair of the ESG.
- 2.4.30 It is however acknowledged that at present, not all of the organisations listed above have this in-house capacity. As such, whilst the invitation to the relevant Technical Panel will remain open should this capacity be developed in the future, it is also proposed that the airport operator will fund an independent technical expert on the subject matter to sit on each relevant Technical Panel. This independent expert will be appointed by the Chair of the ESG from a shortlist agreed between the Chair and the airport operator.
- 2.4.31 In this way, in the worst-case scenario where no invited organisations are able to nominate a representative with the appropriate technical background, there will still be the ability for the Technical Panel to undertake an independent technical review of the material submitted to it by the airport operator.
- 2.4.32 The Noise Technical Panel will therefore consist of:
- a. Independent Technical Expert – Required
 - b. Central Bedfordshire Council – Invited
 - c. Dacorum Borough Council – Invited
 - d. Luton Borough Council – Invited
 - e. North Hertfordshire District Council – Invited
 - f. Stevenage Borough Council – Invited
 - g. Civil Aviation Authority – Invited
- 2.4.33 The Air Quality Technical Panel will consist of:
- a. Independent Technical Expert – Required
 - b. Central Bedfordshire Council – Invited
 - c. Luton Borough Council – Invited
 - d. North Hertfordshire District Council – Invited
- 2.4.34 The Greenhouse Gas Technical Panel will consist of:
- a. Independent Technical Expert – Required

- b. Central Bedfordshire Council – Invited
- c. Hertfordshire County Council – Invited
- d. Luton Borough Council – Invited
- e. North Hertfordshire District Council – Invited

2.4.35 The Surface Access Technical Panel will include representatives of:

- a. Independent Technical Expert – Required
- b. Airport Transport Forum representative (not from the airport operator) – Invited
- c. Central Bedfordshire Council – Invited
- d. Hertfordshire County Council – Invited
- e. Luton Borough Council – Invited
- f. National Highways – Invited

2.4.36 Paragraph 20 of Schedule 2 to the **DCO [TR020001/APP/2.01]** secures the approach to the establishment of Technical Panels and how they will subsequently operate. Further details as to the operating processes of the Technical Panels are set out in **Appendix B of the GCG Framework [TR020001/APP/7.08]**.

2.5 The role of local communities

- 2.5.1 As part of the GCG Framework, it is recognised that there must be a role for local communities to input into the GCG process, as it is the local communities who experience the greatest environmental effects associated with the airport.
- 2.5.2 As stated in Section 2.4, the members of ESG and the Technical Panels will be required to be planning professionals and technical specialists within the relevant environmental fields respectively, as is required to exercise their functions in an impartial manner. Therefore, it is not considered appropriate for the general public to have membership of either body in a formal decision-making capacity.
- 2.5.3 However, the views of the public should be obtained in order to inform the deliberations of the ESG. The Terms of Reference for the ESG set out how it must ensure consideration is given to feedback provided by local communities insofar as is relevant to the functions of ESG and the matters which it approves.
- 2.5.4 Public meetings will be required to be organised by the airport operator, in consultation with the Technical Panels, to provide the opportunity for the public to offer feedback relevant to the four environmental effects within the GCG Framework and the airport's performance against the associated Limits.
- 2.5.5 Separate meetings will be held for each of the four topics, ensuring that they are suitably publicised¹ and accessible to any members of the general public who

¹ 'Suitably publicised' includes promotion of the relevant date and time of the meetings a minimum of 28 days in advance through the airport operator's website

might wish to attend. The airport operator will be responsible for meeting any related costs for their organisation and administration.

- 2.5.6 Meetings will be chaired by the independent technical expert from the relevant Technical Panel, and representatives of the Technical Panels (alongside the airport operator) will be invited to attend, present and answer / ask questions at their discretion to ensure that the views of the community are captured first-hand. A summary of the meetings will be prepared by the chair, with administrative support from the airport operator if required, to be shared publicly (e.g. on the airport operator's website).
- 2.5.7 In the interests of transparency, meetings of the ESG will also be open to the general public to attend as non-participatory observers. However, there will be a mechanism by which the ESG can hold certain discussions in private if requested by the airport operator – for example where they relate to commercially sensitive matters – as defined by the process set out within the Terms of Reference.
- 2.5.8 Meetings of the Technical Panels will not be open to the general public, where the primary function is to consider the technical veracity of the information submitted to them. However, the summary of the public feedback on the four environmental effects within GCG will be made available to the Technical Panels, as prepared by the independent technical expert. Where formal recommendations are provided by the Technical Panels to the ESG in regard to Level 2 Plans and Mitigation Plans, such recommendations must show how consideration has been given to that feedback insofar as it is relevant.

2.6 Green Controlled Growth and slot co-ordination

- 2.6.1 There are two existing mechanisms that could be used as part of the slot co-ordination process to address environmental effects where a Limit has been exceeded and where it is felt necessary to constrain growth at the airport. These mechanisms are to modify the capacity declaration, as defined previously in Section 1.8, or to implement a local rule, subject to agreement with the airlines using the airport.
- 2.6.2 Slots can only be allocated where their use will not exceed the declared capacity of the airport, which in some cases may mean that slots must be re-timed or cannot be allocated at all. As the airport is 'coordinated', capacity declarations are currently in force. As well as physical capacity limits, such as those relating to the runway, apron or terminal, there are also existing limits relating to night movements and a night quota, aimed at ensuring compliance with the night-time noise contour limit.
- 2.6.3 If a Level 2 Threshold has been exceeded, the next capacity declarations for their associated summer or winter seasons will not be increased until a Level 2 Plan has been approved by the ESG, or monitoring shows that the environmental effect(s) have fallen below the Level 2 Threshold, in line with the defined GCG processes. However, once a capacity declaration has been made, ACL is normally entitled to allocate any unreleased slots in line with the Slot

Allocation Regulations up to the declared capacity and this will continue to apply at the Level 2 Threshold.

- 2.6.4 If a Limit has been breached, the next capacity declarations for their associated summer or winter seasons will not be increased, and will need to be made in such a way that the total number of allocated slots (excluding any disregarded slots) does not exceed the existing number of allocated slots. This capacity declaration must remain in place until the environmental effect(s) have fallen below the Limit.
- 2.6.5 If a planned capacity reduction is considered necessary by the airport operator (for example to reduce environmental effects below a Limit where other methods have been unsuccessful), IATA's Worldwide Airport Slot Guidelines (WASG) set out the process by which this can be implemented, and the constraints that must be taken into account (Ref 2.2). The London Luton Airport Coordination Committee (LACC) must be consulted during the decision process and as soon as possible before any reduction of capacity occurs. In all cases, airlines' historic slots (i.e. 'grandfather rights') must be honoured.
- 2.6.6 The coordinator (i.e. ACL), or other competent body, must communicate the capacity change to all relevant stakeholders well in advance of each scheduling season as soon as possible and at least 14 days and not later than 7 days before the Initial Submission Deadline for the Slot Conference, where upcoming slots are allocated. A capacity reduction after the Initial Submission Deadline, or a capacity reduction that cannot accommodate historic slots must be avoided except in exceptional circumstances.
- 2.6.7 The second mechanism is that the airport operator may suggest to the LACC that a 'local rule' be implemented to address the cause of any breach of a Limit. Local rules can be used to manage a range of airport specific matters, including environmental matters such as night flight restrictions. There are three local rules currently in place at the airport, including;
- a. Local Rule 1, setting the procedures for night-time movement and night quota allocation, linked to the existing planning conditions related to noise;
 - b. Local Rule 2, sanctions for the late hand back of slots; and
 - c. Local Rule 3, administration of the seasonal scheduled passenger seat cap, to ensure compliance with the existing planning condition relating to the maximum permitted annual number of main terminal passengers (i.e. the 18mppa cap).
- 2.6.8 The current 'night quota' local rule is an example of how local rules could be used in the future to ensure that GCG Limits are not exceeded. It is designed to manage the annual night movement and noise quotas by maintaining seasonal allocations at airline level and aggregate running totals, based on aircraft noise certification data, where each aircraft type is allocated a Quota Count (QC) value².

² Quieter aircraft are given a smaller QC. The annual sum total of aggregate QC from all aircraft operations cannot exceed the value of the total quota, and the QC can be used as a forward-planning tool where aircraft schedules and types are known. This gives more control over noise levels than a simple overall movement cap for the airport as noisier aircraft will count more towards an airport's total quota than quieter aircraft.

2.6.9 Both capacity declarations and local rules could be used either independently or in combination at the airport operator's discretion to manage environmental effects at the airport to ensure that the airport stays within its GCG Limits. It is therefore anticipated that they will form a crucial part of the toolbox of interventions that the airport operator could use to manage or mitigate environmental effects at the airport within the context of GCG. A local rule also provides the expected mechanism that would be adopted, subject to statutory requirements, to control slot allocation if this is felt by the airport operator to be the most appropriate way of controlling environmental impacts within reasonable timescales in the event a Limit is breached.

2.7 Compliance with the Green Controlled Growth Framework

2.7.1 By providing a clear set of processes and procedures which must be followed, and measurable Thresholds and Limits at which defined actions must be taken, the GCG Framework will facilitate public and stakeholder scrutiny of decisions connected to the sustainable operation of the airport. Through following this process, it is intended that the GCG Framework will be self-enforcing in respect of mitigating environmental effects above Limits, with the process designed to require action by the airport operator to address any exceedances of the Limits.

2.7.2 However, it is acknowledged that circumstances where the processes set out in the GCG Framework are not followed also need to be considered. A breach of the processes of the framework is therefore not the same as a breach of a Limit. The GCG Framework clearly sets out the steps that must be taken when a breach of a Limit occurs, and it would only be a non-compliance with those defined processes of the GCG Framework that would represent a breach of the legally binding terms of the DCO, and hence enforcement action could be taken against the non-compliant party. In developing the GCG Framework, careful consideration has therefore been given to how enforcement action could be taken should this situation occur.

2.7.3 The mechanism by which statutory planning enforcement takes place for DCOs is set out in Part 8 of the Planning Act 2008 (PA 2008). It should be noted that the "relevant planning authority" (as defined in s173 of the PA08) is able to take a number of steps. The "relevant planning authority" will be Luton Borough Council. However, it is also open for other planning authorities to bring action either through a private prosecution of an offence under section 161, or potentially by way of injunction under section 171 of the PA 2008.

2.7.4 GCG will not modify this existing statutory enforcement regime, and it is not possible in this legislation for this enforcement responsibility to be delegated to another body such as the ESG. As such, the ESG's role in assuring compliance with the processes of the GCG Framework must supplement, rather than replace, the statutory enforcement regime under the PA 2008.

2.7.5 It is also proposed that an additional, supplemental process is enabled under the DCO in relation to enforcement. This again is not intended to modify or prejudice the enforcement provisions in the PA 2008 but provide additional safeguards to prevent breaches of the GCG framework. In particular:

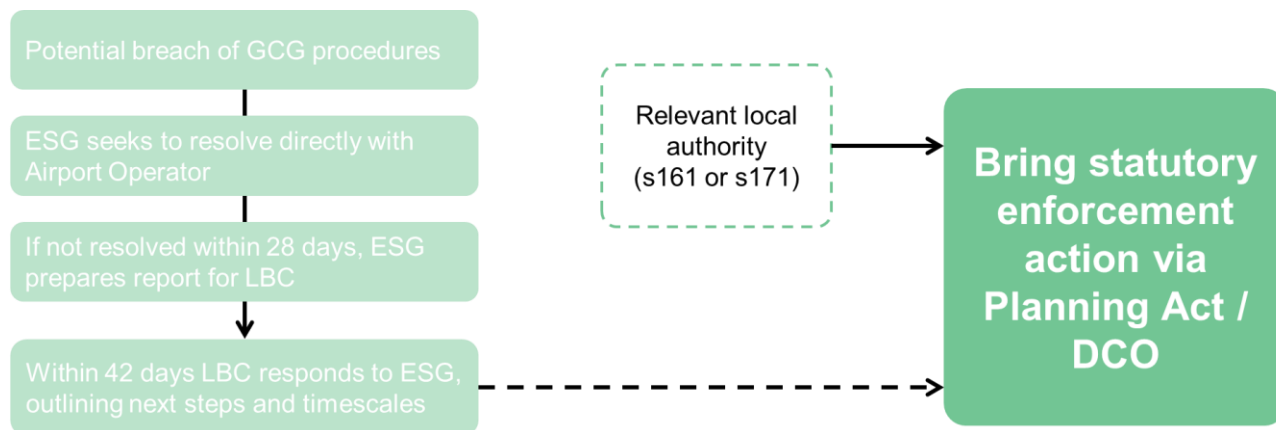
- a. Where the ESG considers that the airport operator has not properly complied with its obligations under the GCG Framework, the ESG should first provide formal notice to the airport operator that they consider a breach has taken place and attempt to resolve this issue directly with the airport operator prior to formal enforcement action being triggered.
- b. However, if the issue is not resolved within 28 days (or a longer mutually agreed time period), the ESG may report to LBC, defined as the ‘relevant local planning authority’ under the PA 2008, a potential breach of airport compliance with the GCG procedures as set out in the DCO. This is on the basis that LBC is the local planning authority for the land in which the majority of the development is located. On the basis of this reporting, LBC will have to consider taking formal enforcement action under the PA 2008 for any failure to act in compliance with the GCG procedures.

2.7.6 Provisions in the DCO subsequently require LBC to notify the ESG, neighbouring local authorities and the airport operator, whether it intends to pursue formal enforcement action and provide reasons for its decision.

2.7.7 As with any such decision (or failure to take a decision) by a public body, LBC’s response would be subject to potential judicial review; the transparency of all aspects of the GCG Framework is intentionally designed to ensure that stakeholders and the public will be able to hold the airport operator and airport owner to account.

2.7.8 A summary of the proposed approach to enforcement where the GCG process has not been followed by the airport operator is set out [Figure 2.13](#).

Figure 2.13: Proposed approach to enforcement



2.7.9 In developing the GCG Framework, consideration has also been given to circumstances where the ESG or Technical Panels are considered to have acted unreasonably, or outside the defined GCG processes. Paragraph 39 of Schedule 2 of the **DCO [TR020001/APP/2.01]** sets out the proposed circumstances and process for appeals by the airport operator to the Secretary of State for Transport.

3 HOW LIMITS AND THRESHOLDS HAVE BEEN DEFINED

3.1 The approach to setting Limits and Thresholds

- 3.1.1 Through GCG, the Applicant is committing to grow and operate the airport within a series of constraints over environmental effects. This is a positive commitment, which means that airport growth is dependent on the GCG Limits not being exceeded.
- 3.1.2 This commitment means that any exceedance of the GCG Limits will have significant implications for the airport. On this basis, it is vital that Limits are not set arbitrarily, but are based on a comprehensive forecasting process so that all parties to GCG can have confidence that they will appropriately balance the need to protect the local community and environment, and the delivery of significant socio-economic benefits for Luton and surrounding areas through expansion.
- 3.1.3 On this basis, it is important that Limits that are aligned with the quantitative forecasts included in the **Environmental Statement [TR020001/APP/5.01]** submitted with the application for development consent.
- 3.1.4 As set out in **Chapter 5** of the **Environmental Statement [TR020001/APP/5.01]**, likely significant effects in each environmental area have been comprehensively assessed and reported across each environmental topic. The EIA is based on a core set of assumptions ('the Core Planning Case') regarding airport capacity, passenger demand and aircraft movement throughput at each assessment phase, in addition to range of factors that are expected to change over time, including the impact of new technologies (for example, the rate of introduction of newer, quieter aircraft).
- 3.1.5 The Environmental Statement also includes a range of sensitivity tests where there are certain known scenarios or risks that may occur that could influence the conclusions of the Core Planning Case. The 'Faster Growth Case' considers the scenario in which passenger demand rises more quickly than forecast in the Core Planning Case and a given level of passenger throughput therefore occurs in an earlier year than in the Core Planning Case. It also assumes that passenger throughput in assessment Phase 1 (see Paragraph 3.1.6 below) reaches 23 mppa by 2027 (see **Chapter 5** of the **Environmental Statement [TR020001/APP/5.01]** for further detail).
- 3.1.6 **Chapter 5** of the **Environmental Statement [TR020001/APP/5.01]** also sets out the approach to assessment phasing. For the purposes of assessment only, three **assessment phases** are considered by the ES, as follows:
- a. Phase 1: Expansion of existing Terminal 1 (T1) to increase capacity to 21.5 mppa. It is currently anticipated that Phase 1 works would commence in 2025 and be complete by mid 2027;
 - b. Phase 2a: Construction of new Terminal 2 (T2) and associated facilities to increase capacity from 21.5 mppa to 27 mppa upon opening of T2. It is currently anticipated that Phase 2a works would commence in early 2033

ending 2036 and would enable a step up in capacity in the first quarter of 2037; and

- c. Phase 2b: Expansion of T2 and associated facilities. It is currently anticipated that Phase 2b works would commence in 2037, and would deliver incremental capacity increases from 27 mppa to 32 mppa. T2 would have capacity for 12 mppa once complete. The works would be completed incrementally with the full capacity provided by 2043.

3.1.7 It is proposed that the magnitude of each Limit (and in turn, Threshold) is aligned with the assessment results from the Faster Growth Case³, which will change over time in line with phasing. This is considered to represent a 'reasonable worst-case' scenario for the Limits to be based upon. The purpose of this approach is to recognise that some of the effects of expansion will change over time in line with growth at the airport, and that the environmental effects experienced will be no worse than those forecast within this 'reasonable worst case' scenario. By phasing Limits in this way, it can also be ensured that the benefits of new technology assumed in the forecasting for the EIA (for example, a new generation of quieter aircraft or the move to electric vehicles), which will be delivered over a longer time period, are captured and shared between the airport and local community having regard to the economic benefits arising from growth.

3.1.8 The Level 1 Thresholds, Level 2 Thresholds and the Limits are therefore set for the following periods:

- a. Phase 1 – From the point at which notice under Article 44(1) of the **DCO [TR020001/APP/2.01]** is served, to the point at which commercial passenger throughput reaches 21.5 mppa, consistent with the assessment of Phase 1 in the EIA;
- b. Phase 2a – From the end of Phase 1 to the point at which commercial passenger throughput reaches 27 mppa, consistent with the assessment of Phase 2a in the EIA;
- c. Phase 2b – From the end of Phase 2a to the point at which commercial passenger throughput of 31.5 mppa is reached; and
- d. Full Capacity Operation – From the end of Phase 2b on an ongoing basis.

3.1.9 These phases have been selected to align with the definition of assessment phases and scenarios assessed in the Environmental Statement in order to ensure that the Limits are based on quantified forecasts of the effects of the expanded airport. This approach preserves a degree of flexibility in how the airport is expanded, provided at all times that it does so within the GCG Limits and other parameters established through the DCO.

3.1.10 Note that while the Phase 1 is the point at which commercial throughput reaches 21.5 mppa, the value of the Limit for this Phase (as with all Limits, as per Paragraph 3.1.5) is based on the Faster Growth Case, which assumes a passenger throughput of 23 mppa. Defining Phase 1 as being up to the point at

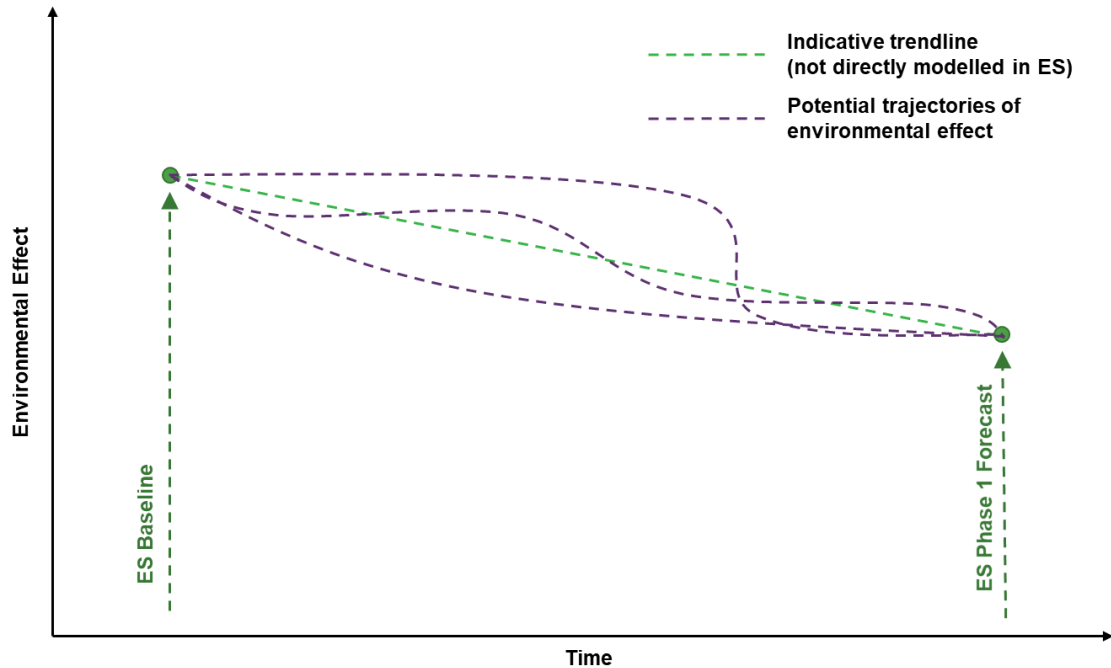
³ Noise Envelope Limits are based on an Updated Faster Growth scenario, see **Applicant's position on noise contour and movement limits [TR020001/APP/8.184]**

which the lower (21.5 mppa) level of throughput is reached ensures that GCG Limits and Thresholds change when Terminal 1 is operating at its design capacity and that as a result, the environmental impacts associated with ongoing operation in Terminal 1 will be controlled at an earlier stage. However, aligning the value of the Limit with the higher level of throughput in the Faster Growth Case means that the airport operator will have sufficient flexibility in the value of the Limit to implement faster growth.

- 3.1.11 Similarly, for the purposes of GCG the end point of Phase 2b is defined as the point where commercial passenger throughput of 31.5 mppa is reached, rather than the definition used in the ES of 32 mppa. This is because as the Proposed Development would be capped at a throughput of 32 mppa, it is likely in practice that actual throughput at maximum capacity would be slightly lower than this level to avoid the risk of the passenger cap being exceeded. Defining Phase 2b in this way for the purposes of GCG means that control over environmental impacts can be maintained once a practical maximum operating capacity is reached.
- 3.1.12 For those GCG Limits that are directly aligned to passenger throughput (Greenhouse Gases and Surface Access), once a particular Phase has been reached, there will be no 'stepping back' to the previous Limit if throughput at the airport decreases back below that for any milestone. This is because environmental effects broadly scale with throughput, and so if there is a period of reduced demand, environmental effects may decrease. Notwithstanding this, the provisions relating to circumstances beyond the control of the operator, as set out in Section 2.2 will remain in force, if for example a future pandemic severely curtailed the demand for aviation, leading to a similar significant fall in passenger public transport mode share, as was experienced in 2020. For Aircraft Noise and Air Quality, Limits are defined with respect to time periods notwithstanding that they will change as passenger throughput increases.
- 3.1.13 The remainder of this Section draws on information presented in the Environmental Statement as to how environmental effects in each of the four GCG areas are forecast to change over time. As the tables in each of the topic sections below make clear, in some cases forecast effects will increase from one Phase to the next, while others will decrease from one Phase to the next.
- 3.1.14 The Environmental Statement does not model each year directly, nor is it required to. However, performance against the GCG Limits will be monitored on an annual basis. As such, the approach to setting the Limits and Thresholds needs to recognise that effects will not simply step up or down during a single given year once a Phase is reached. This is shown indicatively in [Figure 3.1](#) ~~Figure 3.1~~. The green dashed line represents an indicative linear trendline between the two Environmental Statement forecast years, but in reality the trajectory could follow any of the dashed purple lines, or another trajectory entirely, and all of these would be consistent with the Environmental Statement forecasts.
- 3.1.15 The GCG Limits will therefore ensure that there is the required decrease in environmental effects between milestones (where a decrease is forecast), as forecast in the ES, without being prescriptive about when that change must

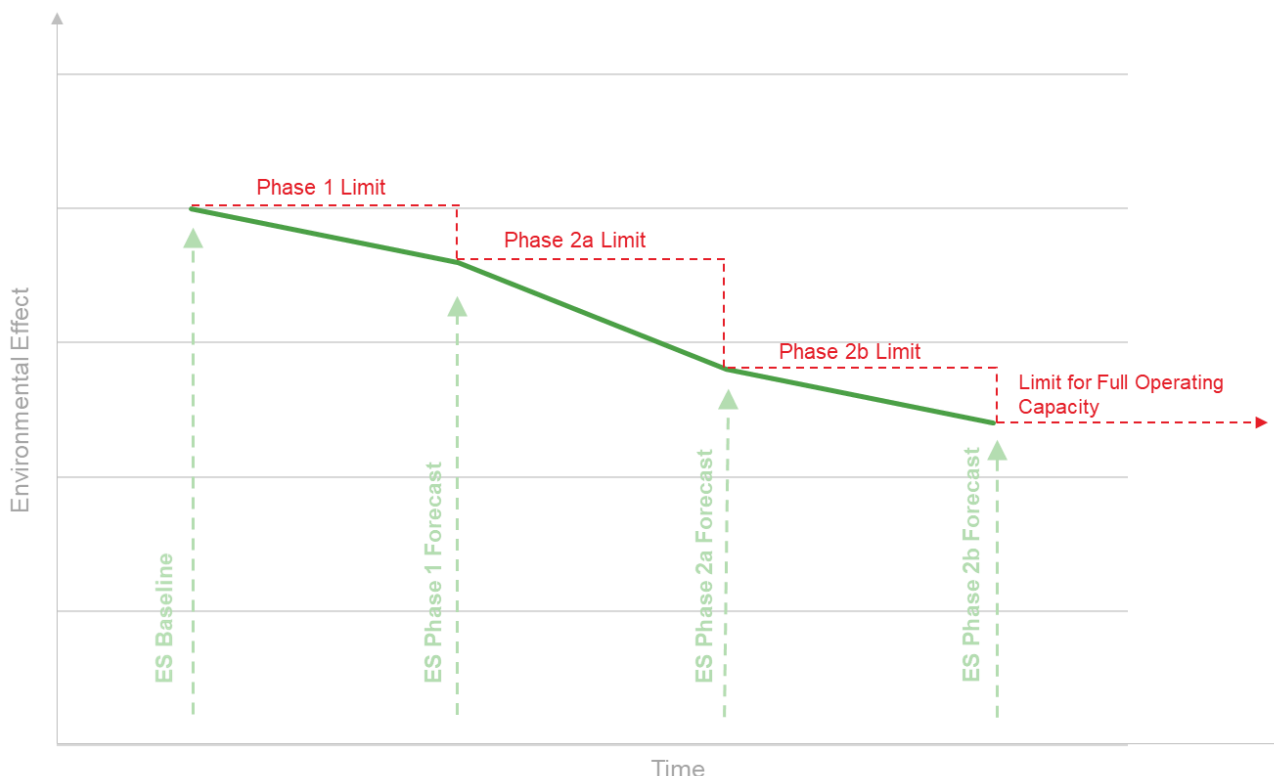
occur, which could, for example, solely be linked to the delivery of one piece of mitigation at a point in time. In this example, the airport will then not be able to continue growing if that mitigation wasn't delivered within the planned timeframe, prior to the Limit changing.

Figure 3.1: Indicative potential change in environmental effects between forecast years



3.1.16 The Limits and Thresholds for each Phase will therefore need to be defined based on the fixed assessment points considered in the ES, and remain flat between each Phase (with the exception of noise, where the Limits are proposed to be set with respect to time, rather than passenger throughput – further details are provided in Section 3.2). The value of the Limits between each Phase will be set according to the highest level of forecast environmental effect, either associated with the assessment year preceding or the assessment year following a given point. This is shown conceptually in [Figure 3.2](#) ~~Figure 3.2~~, for environmental effects that decrease over time.

Figure 3.2: Conceptual approach to setting of Limits between Phases where environmental effects decrease over time



3.1.17 For some Limits, the Limit would remain the same for two or more Phases (i.e. a flat line), or would increase for a latter Phase (specifically noise). In this circumstance, the lower Limits in the earlier Phase(s) will create the headroom for the next period of growth, where the Limit will then step up. In this way, the GCG Framework will require the airport to operate within the forecast level of environmental effect, whilst allowing the flexibility for future growth to be implemented within each Phase.

3.1.18 Each of the Sections below set out the trajectory for the Limit and Thresholds for each environmental topic within the scope of GCG.

3.2 Aircraft Noise (the Noise Envelope)

Approach

3.2.1 Noise is an important issue for people who live and work around the airport and beneath flight paths. The noise effects associated with the airport’s operations are primarily associated with aircraft air noise, which occurs when flights arrive at or depart from the airport.

3.2.2 This part of GCG comprises the Applicant’s proposals for a Noise Envelope that are cognisant of the anticipated policy requirement in Flightpath to the Future (2022), by reference to Aviation 2050 the Future of UK Aviation. This process has also been aligned with expectations set out within the Airports National Policy Statement (dated 2018) (ANPS) that builds on the Aviation Policy

Framework (APF, 2013) and the Civil Aviation Authority's guidance (CAP 1129), in particular:

ANPS Paragraph 5.60: "The applicant should put forward plans for a noise envelope. Such an envelope should be tailored to local priorities and include clear noise performance targets. As such, the design of the envelope should be defined in consultation with local communities and relevant stakeholders, and take account of any independent guidance such as from the Independent Commission on Civil Aviation Noise. The benefits of future technological improvements should be shared between the applicant and its local communities, hence helping to achieve a balance between growth and noise reduction. Suitable review periods should be set in consultation with the parties mentioned above to ensure the noise envelope's framework remains relevant."

- 3.2.3 In line with ANPS 5.60, the Noise Envelope Design Group (NEDG) has been formed to ensure that the design of the envelope is "defined in consultation with local communities and relevant stakeholders".
- 3.2.4 The Noise Envelope and the GCG Framework have similar principles and functions and hence the noise section of GCG is being defined as the Noise Envelope for the Proposed Development, so there is single control process for aircraft noise and this is integrated with the wider control processes which form GCG.
- 3.2.5 The Applicant is committed to sharing the benefits of future technological improvements (in terms of aircraft noise reduction) between communities and the aviation industry. The benefit of the transition to 'new generation' aircraft (e.g. the Airbus 320neo and 321neo and the Boeing 737Max) in the early years of expansion will be shared with the community, with the Limits set at commensurate levels to secure this. A mechanism is also proposed for the Limit to be reduced in future years (beyond the 2030s) if and when quieter 'next generation' aircraft become available that would enable lower noise levels to be achieved than that forecast in the reasonable worst-case assessment reported in the Environmental Statement (see next section).
- 3.2.6 At present, under the terms of the Environmental Noise (England) Regulations 2006, the Airport operator has to develop and engage on a Noise Action Plan (NAP) every five years. The NAP must be informed by noise contour maps and include mitigation measures where necessary. It is therefore proposed that the Limits, Thresholds and periodic review cycle align with the 5-year NAP cycle as part of the GCG Framework. This will be the only environmental topic within GCG that has Limits linked to time, as opposed to passenger throughput.
- 3.2.7 Once the DCO is granted and implemented, the airport operator will adopt the AEDT noise model used to prepare the forecasts relied upon in making the DCO (the forecasts presented in the Environmental Statement). This 'DCO noise model' will then be maintained and used as the basis for planning for growth and noise control at the airport to ensure that future noise forecasts can be consistently compared with the noise Limits and Thresholds set by the DCO using the same model (comparing 'like with like'). The model will also be subject to the periodic review, which creates the opportunity to supersede previously agreed monitoring methods where agreed by ESG and operator (please refer to

the Aircraft Noise Monitoring Plan at **Appendix C** of the **GCG Framework [TR020001/APP/7.08]**).

- 3.2.8 The 'DCO noise model' is defined in the Aircraft Noise Monitoring Plan in **Appendix C** of the **GCG Framework [TR020001/APP/7.08]**.
- 3.2.9 The 'DCO noise model' will be updated in line with any approved Airspace Change Proposal.
- 3.2.10 Once the DCO is made and implemented, the Airport operator will review, and as necessary update, the noise forecasts every five years. This review period aligns with the ongoing need under the Environmental Noise Regulations to publish strategic noise maps and a Noise Action Plan (NAP) every five years starting in 2008. The Noise Envelope five-year periods are aligned with NAP five-year periods (i.e. 2023-2028, 2029-2033, 2034-2038 etc).
- 3.2.11 The airport operator will review and as necessary update its noise forecasts around the mid-point of each five-year period (e.g. 2027, 2032, 2037 etc). This will support planning of airport operations for the next five year-period and, as necessary, any Level 2 Plan or Mitigation Plan required by the GCG Framework (see section 2.2). The review and any update of noise forecasts will align as necessary with any ongoing Airspace Change Processes.
- 3.2.12 By planning over a longer horizon, in line with GCG Framework Limits, the forecasts will support the airport operator working with the airlines to plan their growth and fleet deployment at the airport in line with the Noise Envelope.
- 3.2.13 The five-yearly forecasts will be based on the latest available information for matters such as predicted ATM growth; fleet mix; and aircraft noise source levels and will be informed by the yearly monitoring of noise performance as required by the Aircraft Noise Monitoring Plan (**Appendix C** of the **GCG Framework [TR020001/APP/7.08]**) and the GCG Framework.
- 3.2.14 The five-yearly forecasts will also be used by the airport operator as the basis for its next Noise Action Plan and, where relevant, any future Airspace Change Proposals so there is consistency in reporting and managing noise across the DCO, Environmental Noise Regulations and Airspace Change processes.
- 3.2.15 Each year, the airport operator will convert current and future ~~Level 2~~ Threshold and Limit noise contour areas (see Table 3.1) into equivalent total 16-hour daytime and total 8-hour night-time quota counts⁴. The airport operator will use total scheduled and forecast daytime and night-time quota counts (and their comparison to the relevant ~~Level 2~~ Threshold Equivalent QC and the Limit Equivalent QC):
- a. to inform forward planning of airport operations (both annual and five-year forward plan);
 - b. to incentivise airlines to operate the quietest aircraft available in response to the opportunity of growth;

⁴ The conversion factor from contour area to QC will be based on regression analysis of the relationship between scheduled QCs and actual noise contours from the previous five-years of operation.

- c. as part of the bi-annual process⁵ of slot management and capacity declaration; and
- d. where in the forward plan the Level 2 Threshold Equivalent QC or Limit Equivalent QC is exceeded, to include within the annual Monitoring Report proposals for slot management measures, additional interventions or mitigation to ensure that the Limit will not be exceeded.

3.2.16 As set out above, key to maintaining growth whilst controlling the noise impacts with respect to the Noise Envelope Limits will be the forward planning of capacity declaration and slot management measures. However, a Monitoring Report or Mitigation Report may include additional interventions or mitigation measures to be employed in line with the ongoing Noise Action Plan process, for example:

- a. working with airlines to implement noise abatement operational procedures such as Continuous Descent Approaches (CDA), delayed landing gear deployment and adherence to noise preferential routes; and
- b. methods of incentivisation for the adoption of quieter aircraft such as differential landing charges and Departure Noise Violation Limits⁶.

3.2.17 The five-yearly noise forecast updates will be reviewed by the GCG Noise Technical Panel in relation to any Level 2 Plan or Mitigation Plan.

3.2.18 Noise contours will also be calculated for a preceding monitoring period to allow noise impacts to be assessed against the Thresholds and Limits for compliance purposes as set out in the Aircraft Noise Monitoring Plan (**Appendix C** of the **GCG Framework [TR020001/APP/7.08]**).

Limit and Thresholds

Noise contour area

3.2.19 The measure for the aircraft noise Limits and Thresholds is the L_{Aeq} noise contour area for day (0700 -2300) and night (2300-0700).

3.2.20 The $L_{Aeq,T}$ noise measurement is the most common international measure of aircraft noise. It represents 'equivalent continuous noise level'. L_{Aeq} noise levels over a geographical area, as represented by noise contours, are affected by both the number of aircraft movements, and the noise level from individual aircraft movements. Research by the Civil Aviation Authority (CAP1506 Survey of Noise Attitudes 2014: Aircraft Noise and Annoyance, Second Edition, 2021 and CAP 2161 Survey of Noise Attitudes 2014: Aircraft Noise and Sleep Disturbance) has shown that L_{Aeq} noise contours are the best correlated indicators with health impacts and community annoyance due to aircraft noise.

3.2.21 The exact shape of noise contours can change year on year dependent on factors such as wind direction which can influence the direction in which the runway operates. It is therefore proposed to use the total area enclosed by the

⁵ Twice each year, once for winter and once for summer

⁶ See Section C9 of the **Aircraft Noise Monitoring Plan [TR020001/APP/7.08]**

noise contour as the basis for the Limit, rather than the specific areas of land enclosed by the contour.

- 3.2.22 The size of noise contours is principally impacted by changes in numbers of aircraft movements and the type of aircraft being used. Typically, newer aircraft produce lower noise levels, which means that as each aircraft movement results in lower noise, a greater number of flights can be accommodated with less overall noise impact.
- 3.2.23 The size of noise contours can also be affected by runway ‘modal split’, the direction in which aircraft use the runway (east to west or west to east). In general, aircraft take-off and land into a headwind to maximise lift. As such, the runway modal split is affected by wind direction, which in turn can affect the size of noise contours. As wind direction is outside the control of the airport operator, it is proposed that noise contours calculated annually to determine compliance with the Limits should be calculated using a ‘standard’ modal split, calculated from a 10-year average (2010 – 2019) as used for modelling in the ES. This will allow year on year comparisons of noise performance to be made and compared against limits⁷.
- 3.2.24 The choice of the most appropriate contour band to use was discussed at length with the NEDG. Initially, retaining the contour bands used in the current planning permission (57dBL_{Aeq,16h} and 48dBL_{Aeq,8h}) was considered. Consideration was also given to use of the LOAEL (Lowest Observed Adverse Effect Level) and SOAEL (Significant Observed Adverse Effect Level) values as applied in the ES. However, it was felt that this would require use of both LOAEL and SOAEL contours (separately for day and night), to ensure that, for example, changes in aircraft operations did not reduce the wider LOAEL contour whilst increasing the noise footprint closer to the airport (hence increasing the size of the SOAEL contour). It was also considered that the size of the LOAEL contour may be influenced by routing of aircraft once they were under the control of NATS, and therefore outside of the direct control of the airport. A suitable intermediate noise level between the LOAEL and SOAEL was therefore recommended by the NEDG, with the daytime contour reduced from 57dBL_{Aeq,16h} to 54dBL_{Aeq,16h} in line with research from the Civil Aviation Authority (Ref 3.1) which suggest that the same percentage of respondents said by a previous research study (Ref 3.2) to be highly annoyed at 57 dBL_{Aeq,16h} now occurs at 54 dBL_{Aeq,16h}.
- 3.2.25 Table 3.1 defines the Thresholds and Limits aligned with the 5-year NAP cycle.
- 3.2.26 The noise performance of ‘new generation’ aircraft (e.g. A321Neo and B737Max) and their transition into the fleet can be predicted with a reasonable degree of accuracy into the mid-2030s. The Limits and Thresholds for these periods are therefore set with reference to the reasonable worst-case noise contour areas presented in the Environmental Statement (based on the Faster Growth Case). This ensures that the effects presented in the Environmental Statement are not exceeded and ensures that the benefits of ‘new generation’

⁷ Noise contours with the actual modal split for the previous year will also be reported for information as noted in the Aircraft Noise Monitoring Plan

aircraft technology is shared with the communities in the early years of expansion, as represented by the reduction in noise contour area up to Phase 2a in the Environmental Statement and the stepping down of the noise contour area Limits in the first three 5 year periods in Table 3.1.

3.2.27 The ‘next generation’ of aircraft technology that are expected to start to become available in the mid-2030s (and the subsequent generations expected from the 2050s onwards) do not yet exist and their noise performance is unknown. It is also not possible to accurately forecast at this point in time the expected rate at which this ‘next generation’ aircraft will be adopted into the fleet. However, a key principle of the Noise Envelope and GCG Framework is a mechanism for sharing the benefits of future technological improvements (in terms of aircraft noise reduction) between communities and industry. It is therefore proposed that, starting before the 2029 – 2033 NAP cycle, there will be a requirement to review the Limits and Thresholds for the following 5-year cycles and reduce these, if reasonably practicable, as and when future technology becomes available and its noise performance known. This review process will also apply when an Airspace Change Proposal is approved for the airport. The principles for this review are defined from paragraphs 3.2.29 onwards, and the potential outcome of this review for the daytime Aircraft Noise Limit is shown in Figure 3.3 and for night-time in Figure 3.4.

Figure 3.3: Average summer daytime noise contour Limits and Thresholds

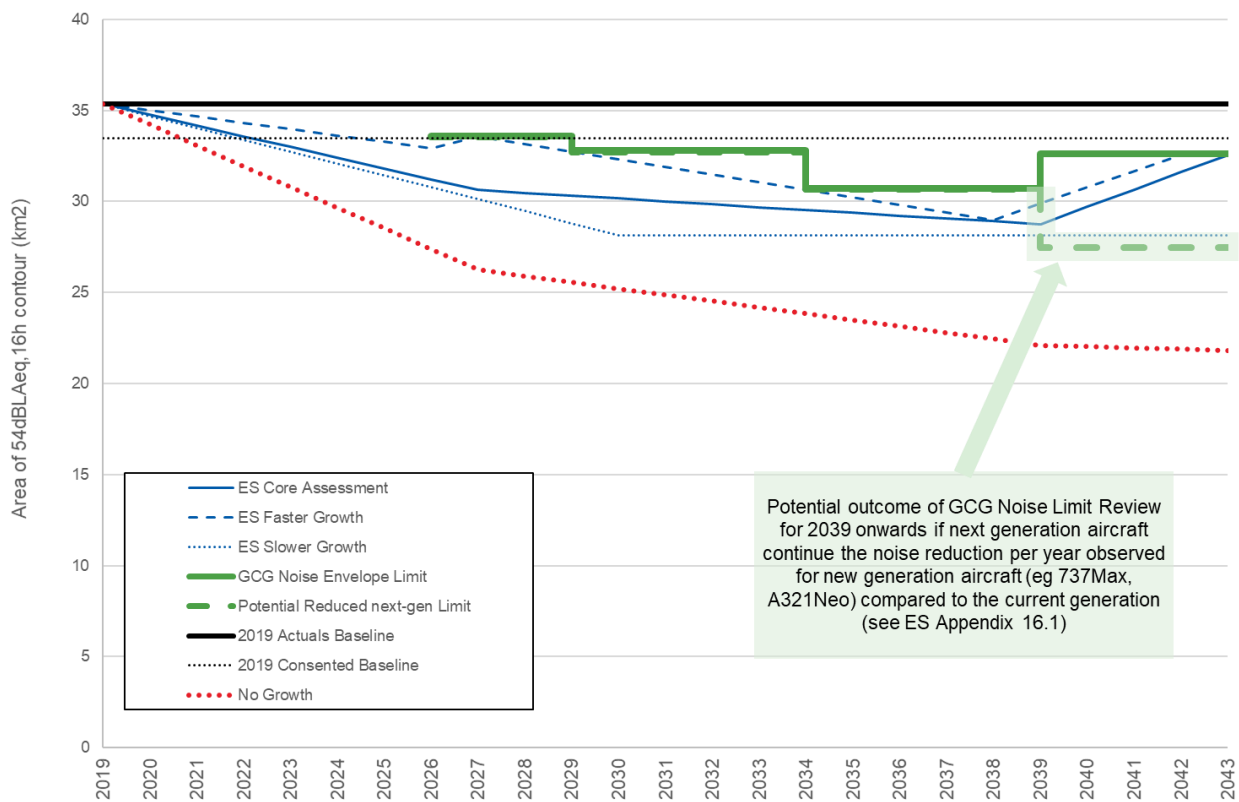


Figure 3.4: Average summer night-time noise contour Limits and Thresholds

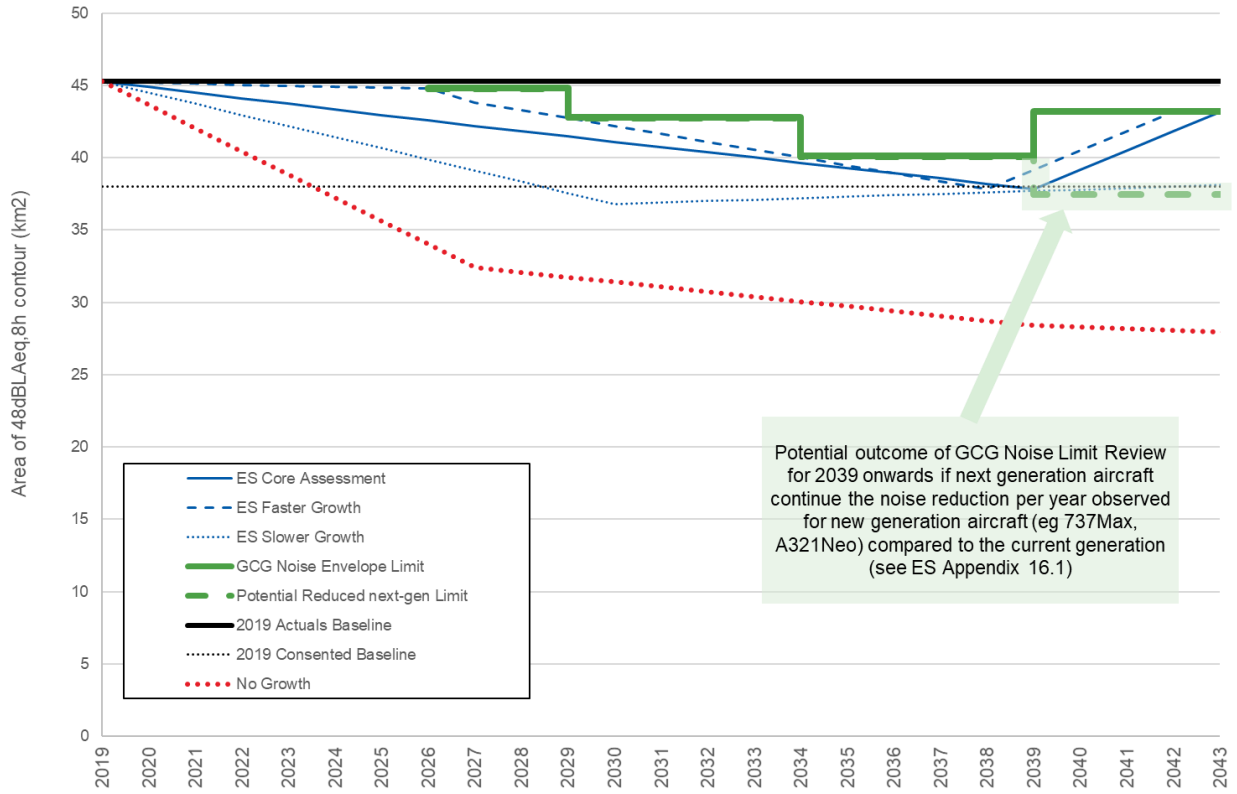


Table 3.1: GCG Limits and Thresholds for aircraft noise

Limit	Up to 2028	2029 – 2033	2034 – 2038	2039 - 2043*	2044 onwards (in 5 year cycles)*
Average summer day-time noise levels, as measured by size (km ²) of 54 dB L _{Aeq,16hr} noise contour	Limit				
	33.0	32.0	30.4	32.6	32.6
	Level 2 Threshold (95% of limit)				
	31.4	30.4	28.9	31.0	31.0
	Level 1 Threshold (85% of Limit)				
	28.1	27.2	25.8	27.7	27.7
Average summer night-time noise levels, as measured by size (km ²) of 48 dB L _{Aeq,8hr} noise contour	Limit				
	43.3	42.1	39.8	43.2	43.2
	Level 2 Threshold (95% of limit)				
	41.1	40.0	37.8	41.0	41.0
	Level 1 Threshold (85% of Limit)				
	36.8	35.8	33.8	36.7	36.7

* Assumes that next-generation (low carbon) aircraft will be no quieter than the new-generation aircraft (e.g. B737Max and A321Neo)

Figure 3.5: Average summer daytime noise contour Limits and Thresholds

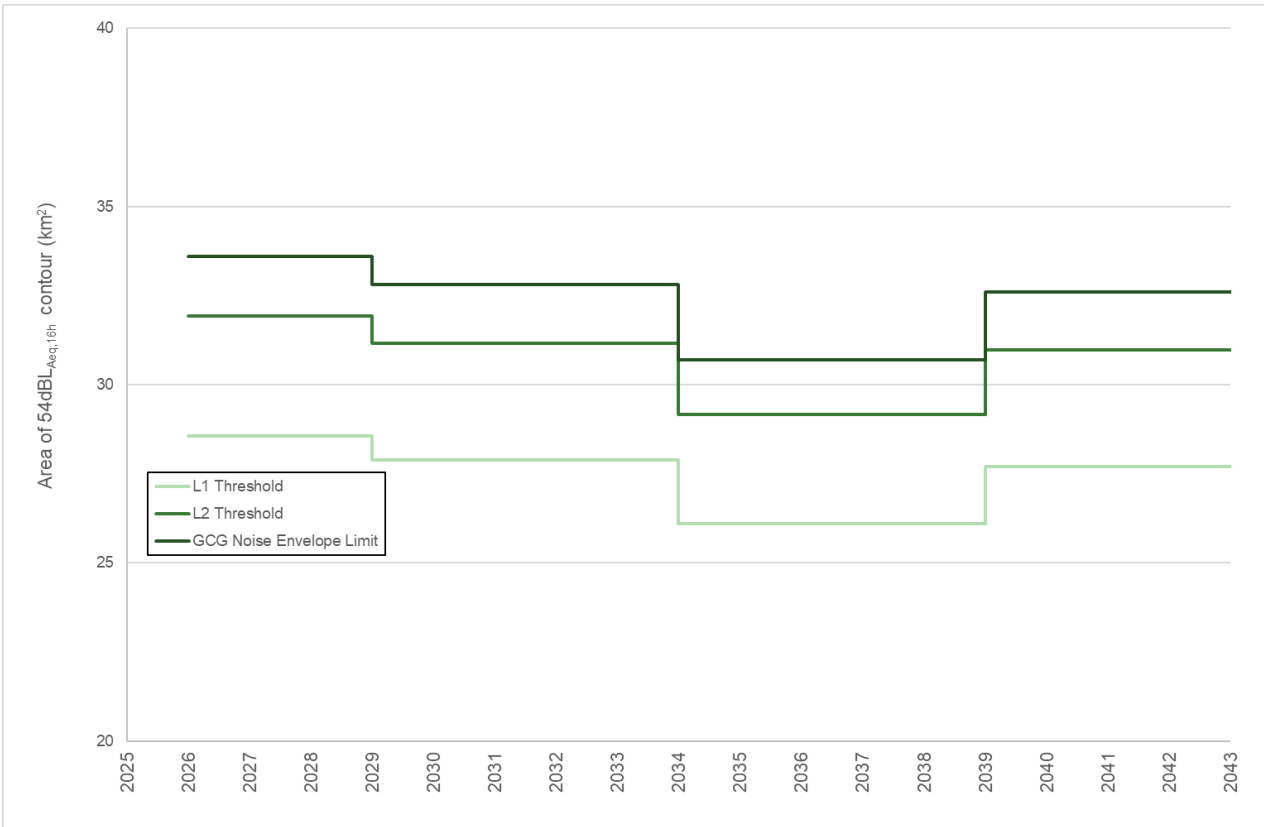
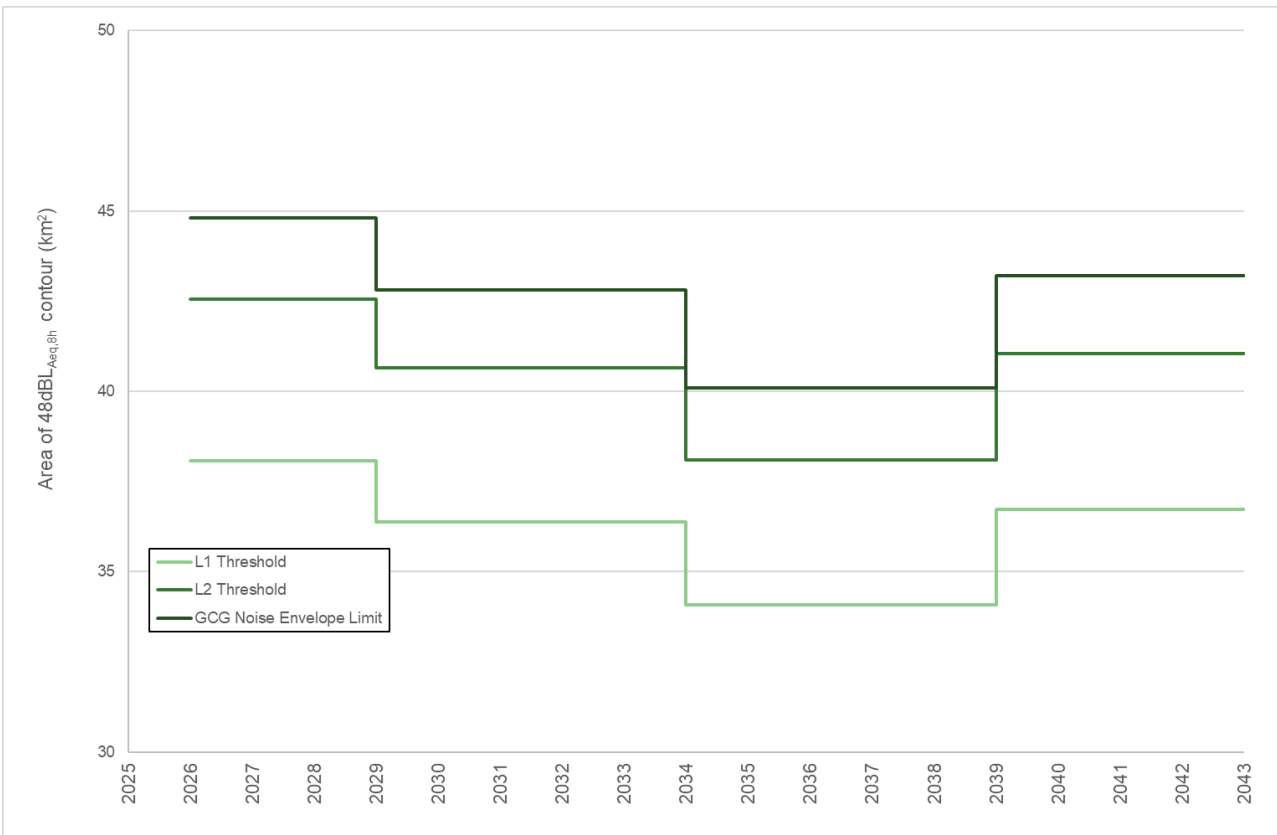


Figure 3.6: Average summer night-time noise contour Limits and Thresholds



Other noise indicators/metrics

- 3.2.28 Additional requirements for monitoring a wider range of noise indicators/metrics to support engagement with the management and control of aircraft noise are set out in **Appendix C of GCG Framework [TR020001/APP/7.08]**, the Aircraft Noise Monitoring Plan.

Noise Limit Review

- 3.2.29 In addition to the five-yearly noise forecast updates (see paragraphs 3.2.10 to 3.2.16), the airport operator will also update forecasts when there is a change in circumstances that could affect the aircraft noise experienced by the communities around the airport. A change would be either the ICAO publishing a new 'noise chapter' for the Next-Gen, low carbon, aircraft (i.e. the next 'Chapter' following on from the current 'Chapter 14') or the approval of an Airspace Change Proposal⁸. It is anticipated that the next ICAO noise Chapter should be published towards the end of the 2020s or in the early 2030s, in advance of the first Next-Gen aircraft entering service in the mid-2030s. It is anticipated that airspace change proposals may be approved by the end of the 2020s or in the early 2030s as a result of the Future Airspace Strategy Implementation – South (FASI-S) programme.
- 3.2.30 The airport operator will update the five-yearly noise forecasts aligned with any approved Airspace Change Proposal. It is acknowledged that the Airspace Change process sits outside of the DCO process, and that there are processes that will need to be followed as a result of the Air Space Modernisation Strategy. A reasonable worst case scenario has been assessed for the purposes of the EIA, and there is therefore confidence that Air Space Modernisation can be undertaken within the parameters and constraints proposed in the DCO.
- 3.2.31 In response to a new ICAO noise chapter, the airport operator will create an alternative noise forecast (alternative to the forecasting described at paragraphs 3.2.10 to 3.2.16), that will be based on the most up to date five-yearly forecast available at the time aligned with any parallel requirements to provide noise information as part of any airspace change process. The alternative noise forecast will be used to evaluate how aircraft noise around the airport could change as a result of the progressive introduction of latest noise chapter aircraft. The alternative forecast should include sensitivity tests as appropriate (e.g. for the rate at which new Chapter aircraft will enter into the fleet mix).
- 3.2.32 The alternative forecast will be used, in particular, to plan the period of growth permitted by the DCO between Phase 2a and full use of Phase 2b (expected to be between 2039 and 2043).
- 3.2.33 The alternative noise forecast will be used to progressively test whether the DCO Noise Limits (and corresponding Thresholds) could be reduced from 2039 onwards. No change in DCO Noise Limits or Thresholds is envisaged before

⁸ Either promoted by the airport operator or in response to a CAA instruction as needed to optimise airspace design across the SE of England

2039⁹ to ensure that the limits set by the DCO up to 2039 (particularly as set for the 2034-2038 five-year period), as adjusted for any approved Airspace Change Proposal, drive the continuing introduction of New-Gen aircraft into the growing fleet using the airport to ensure that the noise impact around the airport is reduced below the '2019 cap'¹⁰ as quickly as reasonably practicable and is, as a minimum, smaller than the '2019 cap' (as adjusted for the 'DCO noise model') for the whole of the five-year period 2034-2038 for the daytime (see Figure 3.3).

- 3.2.34 Figures 3.2 and 3.3 indicate the possible outcome of the Noise Limits Review if next-gen aircraft follow the trend in aircraft noise reduction set out in the ICAO report on Environmental Trends in Aviation to 2050 (Ref 3.3), which predicts a decrease ranging from 0.1 to 0.3 EPNdB per year. The possible revision in noise limits show on Figure 3.3 and Figure 3.4 assumes an average reduction of 0.2 ENPdB per year.
- 3.2.35 The airport operator will present the alternative noise forecasts to the Noise Technical Panel at the earliest opportunity. The Noise Technical Panel should have due regard to the CAA's parallel consideration of noise information with regard to any Airspace Change Process.
- 3.2.36 Within six months of a change and based on the alternative noise forecasts, the airport operator must prepare a Noise Limits Review (a document) that will set out the airport operator's proposal to reduce, where reasonably practicable, the DCO Noise Limits and Thresholds. For airspace change, this would be in response to an approved Airspace Change Proposal. For a new ICAO noise chapter and associated new aircraft technology, the Noise Limit Review would present proposed Noise Limit and Threshold reductions from 2039 onwards in five-year steps based on the alternative noise forecast and discussions with the Noise Technical Panel.
- 3.2.37 The proposal made in the Noise Limit Review in response to a new ICAO noise chapter and associated new aircraft technology must:
- a. permit the airport growth granted by the DCO;
 - b. reduce the Noise Limits and corresponding Thresholds if reasonably practicable (as informed by the alternative noise forecasts and dialogue with the Noise Technical Panel as set out in preceding paragraphs and if reasonably practicable what the new Noise Limits would be and when the Noise Limits would be changed);
 - c. where (b) identifies opportunities to reduce Noise Limits and corresponding Thresholds, reduce the Noise Limits so they are below the '2019 cap'¹¹ as quickly as is reasonably practicable to share the benefits

⁹ Other than as a result of an airspace change which could require noise limits to be increased where the airspace change is a direct consequence of CAA instruction to optimise the airspace in SE England balancing the needs of different airports.

¹⁰ The short term day and night noise contour area limits set by condition 10 to the planning permission 15/00950/VARCON dated 13 October 2017 as calculated using the 'DCO noise model'.

¹¹ As defined by the short term limits in Condition 10 to the Planning Permission 15/00950/VARCON (dated 13th October 2017)

of the technology improvement with the communities affected by aircraft noise;

- d. Identify whether changes to the forecast shape of the 54dBLAeq,16h and 48dBLAeq,8h noise contours have occurred, such that noise impacts are experienced by different local authorities from those originally identified and included as part of the Noise Technical Panel; and
- e. Where (d) identifies changes to the forecast shape of the 54dBLAeq,16h and 48dBLAeq,8h noise contours, set out any necessary amendments to the local authorities included as part of the Noise Technical Panel.

- 3.2.38 The draft Noise Limits Review must be submitted to the Noise Technical Panel for review. The Noise Technical Panel must complete its review within one month. The Noise Technical Panel review must have due regard to parallel consideration of noise information by the CAA with regard to any Airspace Change Process.
- 3.2.39 Within 2 months, the airport operator then updates the Noise Limits Review where it considers necessary in response to the Noise Technical Panel review and formally submits it to ESG for determination in accordance with paragraph 25(3) of Schedule 2 to the DCO. The airport operator will provide a note documenting its response to the Noise Technical Panel's review on the draft Noise Limits Review and any parallel consideration of noise information by the CAA and this note is submitted to ESG in support of the application for ESG to approve the final Noise Limits Review.
- 3.2.40 The ESG must determine the airport operator's request for approval within 56 days or the application is deemed to have been approved.
- 3.2.41 Where the ESG rejects an application for approval or ESG has approved but sought to apply lower Noise Limits than presented in the Noise Limits Review, then the airport operator may appeal to the Secretary of State. Paragraph 39 of Schedule 2 of the **DCO [TR020001/APP/2.01]** sets out the procedure for such appeals.
- 3.2.42 The decision of the ESG to accept or reject the Noise Limits Review will be published on the airport operator's website.
- 3.2.43 Following the determination of the first Noise Limits Review, the airport operator must prepare a Noise Limits Review and submit for ESG approval every five-years following the same steps set out above always taking account of the latest information available and taking account of any further changes (i.e. further ICAO noise chapters and / or airspace change approvals).

Monitoring

- 3.2.44 Please see the Aircraft Noise Monitoring Plan at **Appendix C** of the **GCG Framework [TR020001/APP/7.08]**.

Summary

- 3.2.45 The approach to noise within the GCG Framework has been developed to act as the Noise Envelope for the Proposed Development so that there is a single

process controlling aircraft noise as the airport grows, aligned with the separate airspace change and environmental noise regulation processes. The key principles of the approach are:

- a. GCG will place Limits and warning Thresholds on the total size of summer average LAeq noise contours for day (0700 -2300) and night (2300-0700), based on a standard modal split.
- b. Limits are fixed for five-year periods, with the initial Limit applying up to the end of 2028. Subsequently, defined Limits decrease for the five-year periods 2029-2033 and 2034-2038 to maximise the community benefit of the transition to quieter new-gen aircraft. The defined limits then increase from 2039 to allow for growth and current uncertainty in the noise performance of next-gen (low-carbon) aircraft.
- c. Noise Limits Reviews will be triggered by an approved airspace change proposal or publication of a new ICAO noise chapter.
- d. Noise Limits Reviews should consider whether it is reasonably practicable to reduce Limits from the values established through the DCO, whilst permitting the growth granted by the DCO. This is with the intent of reducing Limits below the 2019 Cap as quickly as is reasonably practicable.
- e. Limits could be changed for the next five-year period onwards in response to an approved airspace change proposal, and from 2039 onwards in response to a new ICAO noise chapter.
- f. A Noise Limits Review will be subject to approval by the ESG, as informed by the Noise Technical Panel.
- g. Following the initial Noise Limits Review, the process will be repeated on a five-yearly cycle.
- h. Compliance with the Limits and performance relative to the Thresholds will be monitored and reported every year via a binding Aircraft Noise Monitoring Plan with Level 2 Plans and Mitigation Plans triggered if necessary to improve noise performance overseen by the ESG.
- i. The Aircraft Noise Monitoring Plan requires publication of a wide range of other noise and airport operational indicators to inform communities and aircraft noise management. The monitoring plan also requires continuing validation and improvement of the airport operator's noise modelling and monitoring systems in line with CAA guidance.

3.3 Air quality

Approach

- 3.3.1 Road traffic is the primary contributor to air quality effects in Luton, and on some roads in and around Luton there are forecast to be increased levels of traffic due to the expansion of the airport. Increased traffic levels associated with trips to and from the airport therefore has potential to negatively affect local air quality. Some air quality effects near to the airport are also associated with the emissions from aircraft.

- 3.3.2 Existing legislation already mandates the monitoring and management of air quality in the UK, and the GCG Framework must align with this legislative framework. Specifically, the local authorities surrounding the airport have a statutory duty (Ref 3.4) to monitor air quality within their administrative boundaries, report performance against the UK Air Quality Objectives (detailed in Table 7.2 of **Chapter 7** of the **Environmental Statement [TR020001/APP/5.01]**) set by the Government for a range of pollutants, and subsequently take action to improve air quality if required¹². The relative contribution of the airport to any air quality issues is therefore a key factor to be addressed within GCG, as many existing issues with air quality are unrelated to the airport, are outside of the airport's control, and can only be resolved by LBC and other neighbouring authorities.
- 3.3.3 The main pollutants relevant to human health that are associated with operations at the airport, as identified by **Chapter 7** of the **Environmental Statement [TR020001/APP/5.01]**, are different sizes of Particulate Matter (PM₁₀, PM_{2.5}) and Nitrogen Oxides (NO_x) – in particular Nitrogen Dioxide (NO₂). It is these three pollutants that the GCG Limits for Air Quality are proposed to relate to, as these are the pollutants assessed and with impacts forecast as part of the application for development consent.
- 3.3.4 The detailed assessments carried out for the Environmental Statement assess the effects of expansion on the total emissions of pollutants, and how they are dispersed across the local area over time (the measurable concentration of pollutants at given locations). Locations which are sensitive to changes in air quality (known as sensitive receptors) are those at which human health and ecosystems could be impacted. The assessments in the Environmental Statement include modelled scenarios for the current baseline conditions, a 'future baseline' setting out what will happen in future if the airport was not expanded, and a 'with development' scenario, which includes the phased expansion of the airport to 32 mppa.
- 3.3.5 **Chapter 7** of the **Environmental Statement [TR020001/APP/5.01]** has assessed the modelled change in air quality concentrations at 601 representative human receptors close to the airport and/or the affected road network. This assessment concludes that no significant air quality impacts are forecast at any of these locations.
- 3.3.6 A requirement to carry out ongoing monitoring of all 601 locations to determine the air quality effect of the Proposed Development would not be feasible, nor proportionate given the Environmental Statement is forecasting no significant air quality impacts. In order to ensure that monitoring is targeted at a proportionate number of locations, it is therefore proposed that sifting criteria are applied to the modelled receptors to identify priority locations for monitoring. The achievement of the Air Quality Limits will then be determined by the monitoring results solely at that shortlist of sensitive locations.

¹² Specifically, to declare an Air Quality Management Area (AQMA) and produce an Air Quality Action Plan (AQAP) if exceedances are found at relevant locations of exposure.

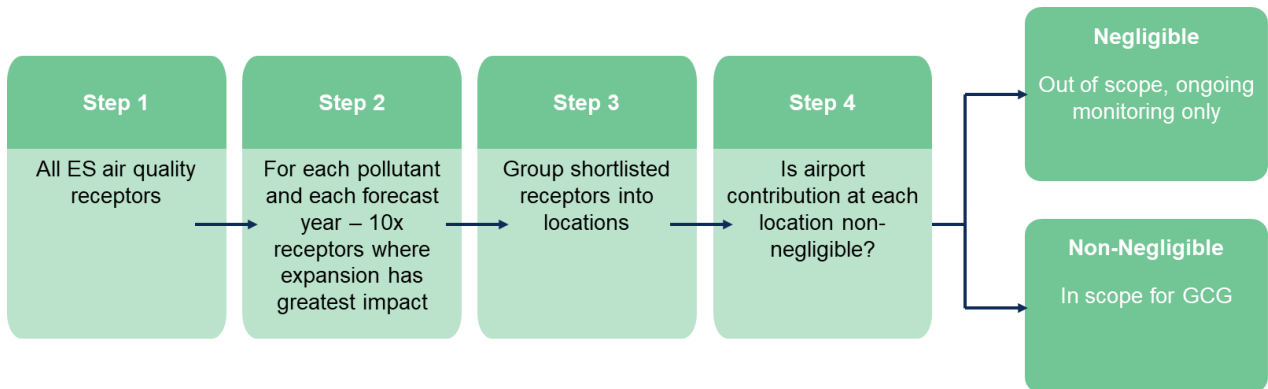
- 3.3.7 To determine the shortlist of sensitive locations, ten receptors were initially considered where the air quality forecasting is suggesting the airport has the greatest proportionate effect on air quality, in terms of the increase in PM₁₀, PM_{2.5} and NO₂ from the future baseline 'Do Minimum' scenario (without airport expansion) to the future 'Do Something' scenario with airport expansion in place in each forecast year. This gives a theoretical maximum of 90 receptors (three pollutants considered for three forecast years representative of the phases, with ten locations in each), but as the greatest impact occurs at the same receptors in multiple years or for multiple pollutants, this gives a shortlist of 43 receptors.
- 3.3.8 Some of these 43 receptors are in close proximity to each other, and therefore given the requirement for location-based monitoring, this list has been simplified to 15 key locations, with a representative receptor identified for each one. However, not all of these locations will experience impacts across all three pollutants being considered (NO₂, PM₁₀, and PM_{2.5}) and across all forecast years.
- 3.3.9 As such, an additional step has been implemented to filter out locations from the scope of GCG where the total airport impact (i.e. the air quality impacts not just of expansion, but also of the existing airport) is negligible. This filtering process has been based on the industry-standard guidance from Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM), reproduced at [Table 3.2](#) ~~Table 3.2~~, to define negligible and non-negligible impacts.

Table 3.2: IAQM guidance on describing air quality impacts (Ref 3.5)

Annual Average Concentration at receptor	% Change in concentration relative to Air Quality Assessment Level (AQAL)			
	<1%	2-5%	6-10%	>10%
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76-94% of AQAL	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Slight	Moderate	Moderate	Substantial
103-109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

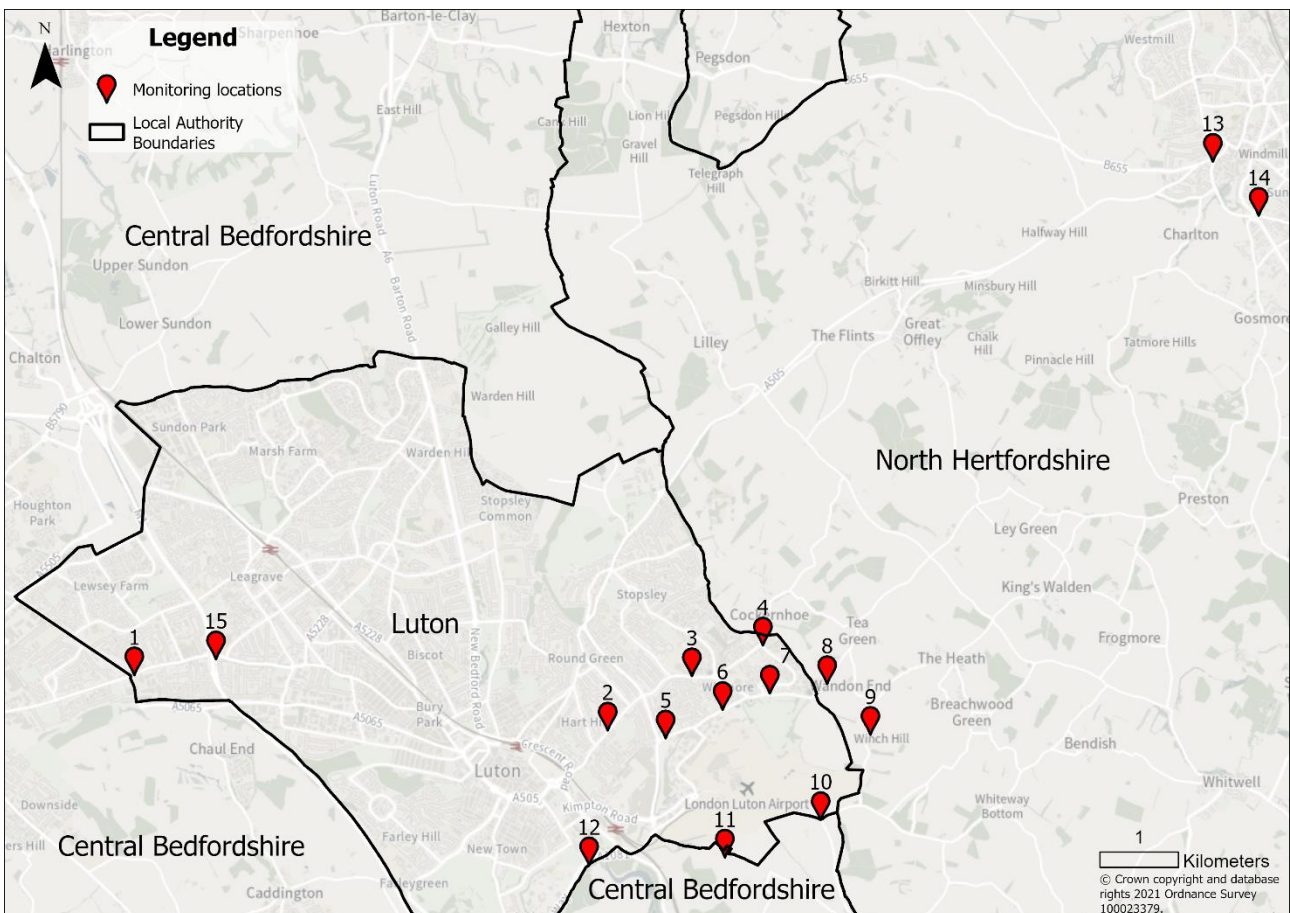
- 3.3.10 The process used to identify locations within scope for GCG is shown in Figure 3.7.

Figure 3.7: Process for shortlisting GCG Air Quality locations



3.3.11 The list of 15 locations considered for the purposes of GCG are shown in [Figure 3.8](#). The locations are listed in [Table 3.3](#) and the extent of impacts, and decision on whether each location is in or out of scope based on total airport impact for GCG is included in Appendix A and summarised in Table 3.4.

Figure 3.8: Locations for ongoing monitoring of air quality concentrations



3.3.12 This determination is based on the results of the air quality assessment for each assessment phase, which considers the relevant UK legal air quality limit in

force for the forecast year utilised for each assessment phase (2026 for assessment phase 1, 2039 for assessment phase 2a, 2042 for assessment phase 2b, based on the Faster Growth Case). The percentage airport contributions stated therefore reflect the total airport-related contribution relative to the UK legal air quality limit in force for the corresponding assessment phase.

- 3.3.13 In practice, passenger growth may be faster or slower than assumed (provided at all times that environmental impacts do not exceed Green Controlled Growth Limits). As such, there may be a need in future to recalculate airport contributions with respect to the proposed time-bound PM_{2.5} Limits. To reflect this possibility, there is a mandatory review process of in scope locations set out later in this section when (or before) new Limits come into effect.

Table 3.3: Air quality monitoring locations

ID	X	Y	Site type	Owner	Name
1	504408	222509	Additional	-	A505
2	510431	221806	Additional	-	Crawley Green Road 1
3	511502	222497	Additional	-	Crawley Green Road 2
4	512405	222887	Additional	-	Crawley Green Road 3
5	511168	221706	Existing: LLA 15	LLAOL	Eaton Green Road 1 (LLA15)
6	511893	222068	Existing: LN25	LBC	Eaton Green Road 2 (LN25)
7	512493	222276	Additional	-	Eaton Green Road 3
8	513223	222397	Existing: L4	LR	Darley Road (L4)
9	513773	221752	Existing: L6	LR	Winch Hill (L6)
10	513140	220669	Existing: LLA 11	LLAOL	Dane Street (LLA11)
11	511922	220193	Additional	-	Somerles Castle
12	510194	220093	Additional	-	New Airport Way
13	518130	229036	Existing: NH93	NHDC	Hitchin 1 (NH93)
14	518713	228349	Existing: NH2	NHDC	Hitchin 2 (NH2)
15	505447	222712	Additional	-	M1

Table 3.4: Air quality monitoring requirements by location

ID	Name	Pollutant	Phase 1	Phase 2a	Phase 2b	Full Operating Capacity
1	A505	NO ₂	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀				
		PM _{2.5}				
2	Crawley Green Road 1	NO ₂	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀				
		PM _{2.5}				
3	Crawley Green Road 2	NO ₂	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀				
		PM _{2.5}				
4	Crawley Green Road 3	NO ₂	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀				
		PM _{2.5}				
5	Eaton Green Road 1 (LLA15)	NO ₂	In Scope (9% airport contribution)	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀	Out of Scope – Monitoring Only			
		PM _{2.5}				
6	Eaton Green Road 2 (LN25)	NO ₂	In Scope (11% airport contribution)	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀	Out of Scope – Monitoring Only			
		PM _{2.5}				
7	Eaton Green Road 3	NO ₂	In Scope (10% airport contribution)	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀	Out of Scope – Monitoring Only			
		PM _{2.5}				
8	Darley Road (L4)	NO ₂	In Scope (6% airport contribution)	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀				

ID	Name	Pollutant	Phase 1	Phase 2a	Phase 2b	Full Operating Capacity
		PM _{2.5}	Out of Scope – Monitoring Only			
9	Winch Hill (L6)	NO ₂	In Scope (7% airport contribution)	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀	Out of Scope – Monitoring Only			
		PM _{2.5}				
10	Dane Street (LLA11)	NO ₂	In Scope (13% airport contribution)	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀	Out of Scope – Monitoring Only			
		PM _{2.5}				
11	Someries Castle	NO ₂	In Scope (8% airport contribution)	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀	Out of Scope – Monitoring Only			
		PM _{2.5}				
12	New Airport Way	NO ₂	In Scope (6% airport contribution)	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀	Out of Scope – Monitoring Only			
		PM _{2.5}				
13	Hitchin 1 (NH93)	NO ₂	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀				
		PM _{2.5}				
14	Hitchin 2 (NH2)	NO ₂	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀				
		PM _{2.5}				
15	M1	NO ₂	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only	Out of Scope – Monitoring Only
		PM ₁₀				
		PM _{2.5}				

Limit and Thresholds

- 3.3.14 Notwithstanding the steps taken above to ensure that the approach to the air quality limit within GCG is proportionate to airport impact, the **Environmental Statement [TR020001/APP/5.01]** is forecasting that there will be no significant air quality impacts arising from expansion.
- 3.3.15 This therefore poses an issue in respect to how airport-related air quality effects are monitored and reported. This is because the forecast concentration of pollutants in most locations is very similar in both the 'with airport expansion' and 'without airport expansion' scenarios.
- 3.3.16 In addition, unlike the other environmental topics in scope for GCG, an exceedance of an Air Quality Limit (determined by monitoring) that is linked to the 'with expansion' forecast could be wholly unrelated to the expansion of the airport, for example, due to growth in non-airport related traffic.
- 3.3.17 The Air Quality Limits have therefore been linked to current UK National Air Quality Objectives for the average annual concentrations of the three pollutants. By setting the Limits for each pollutant in this way, this represents a commitment from the Applicant to stop growth if the airport is materially contributing to an exceedance of the UK legal limit. The Thresholds sitting below the Limit have then been set at 75% of the Limit value (Level 1 Threshold) and 95% of the Limit value (Level 2 Threshold) to align with the values used by the IAQM in describing air quality impacts and outlined in [Table 3.2](#).
- 3.3.18 In response to the new long term legal target and interim target for PM_{2.5} levels, as set out in the Government's Environmental Improvement Plan, Limits and associated Thresholds for PM_{2.5} concentrations will also change over time, irrespective of Phasing, to align with the dates for these Government targets. The locations shown as being in scope in Table 3.4 must be reviewed within six months of the new legal or interim targets coming into effect.

Table 3.5: GCG Limits and Thresholds for air quality

Limit	Up to 2026 (all Phases)	2027 to 2039 (all Phases)	2040 onwards (all Phases)
Annual average PM _{2.5} concentration	Limit		
	20 µg/m ³	12 µg/m ³	10 µg/m ³
	Level 2 Threshold		
	19 µg/m ³	11.4 µg/m ³	9.5 µg/m ³
	Level 1 Threshold		
	15 µg/m ³	9 µg/m ³	7.5 µg/m ³
Annual average PM ₁₀ concentration	Limit		
	40 µg/m ³	40 µg/m ³	40 µg/m ³
	Level 2 Threshold		
	38 µg/m ³	38 µg/m ³	38 µg/m ³
	Level 1 Threshold		
	30 µg/m ³	30 µg/m ³	30 µg/m ³
Annual average NO ₂ concentration	Limit		
	40 µg/m ³	40 µg/m ³	40 µg/m ³
	Level 2 Threshold		
	38 µg/m ³	38 µg/m ³	38 µg/m ³
	Level 1 Threshold		
	30 µg/m ³	30 µg/m ³	30 µg/m ³

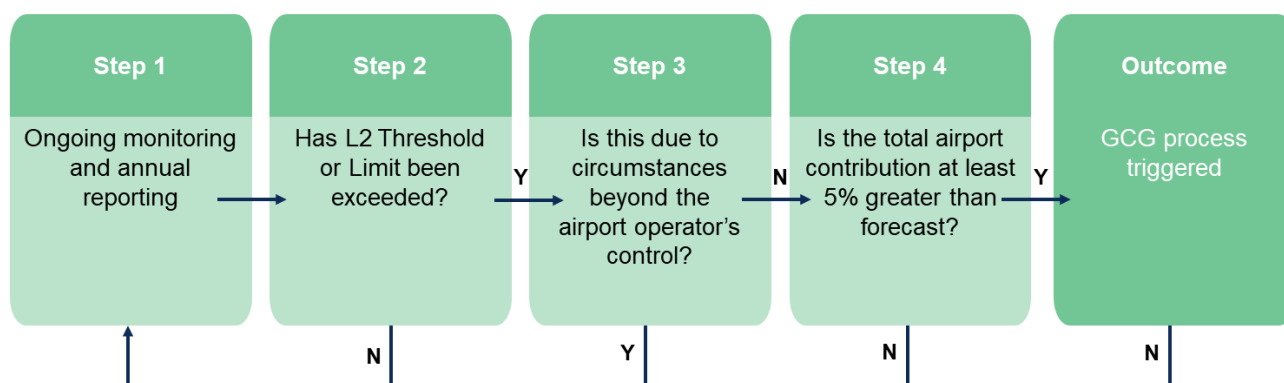
- 3.3.19 If monitoring were to show that the Limit or Level 2 threshold was exceeded at any one of the locations listed as being in scope in Table 3.4 this does not immediately trigger the controls on growth required as part of the GCG Framework. Instead, this will trigger a requirement for the airport operator to determine the cause of the exceedance.
- 3.3.20 Indicatively, this could include analysis of an emissions inventory and background/regional air quality data, in addition to commissioning of additional traffic surveys in order to understand changes in airport-related traffic flows.
- 3.3.21 If the breach was a result of factors unrelated to the airport's operation, as certified by the ESG in accordance with its Terms of Reference, this will not trigger the GCG process (i.e. no exceedance of the Level 2 Threshold or breach of a Limit) and growth could continue.
- 3.3.22 If the breach is due to factors related to the airport, the GCG process will be triggered (i.e. a Level 2 Plan or Mitigation Plan will need to be submitted to the

ESG, and the appropriate processes followed) where this analysis shows that the airport’s contribution to concentrations of a pollutant (relative to the Limit) is at least five percentage points greater than was forecast in Table 3.4.

3.3.23 This is on the basis that to determine the airport’s impact to an air quality exceedance, the airport’s contribution will need to be determined and this surveyed data compared to modelled forecasts used in the Environmental Statement. These two data sources will not necessarily be directly comparable, and as such this 5% buffer will allow for discrepancies between the two data sources. A buffer of 5% has been chosen to align with the bandings used for air quality impacts set out in [Table 3.2](#).

3.3.24 This approach is summarised in Figure 3.9.

Figure 3.9: Process for monitoring air quality at locations in scope for GCG, and determining airport contribution



3.3.25 Where the Mitigation Plan includes proposals for the airport operator to directly mitigate air quality impacts, the ‘toolbox’ of interventions is likely to overlap with the types of mitigation that could be considered to address a breach of the surface access limit, including measures to encourage the use of public transport and active travel such as new bus and coach routes, subsidised tickets for staff and improved on-airport cycle facilities. However, it may also include measures to encourage the use of cleaner or zero-emissions vehicles including the provision of additional electric vehicle charging points or salary sacrifice schemes for the purchase of zero-emission vehicles for staff.

3.3.26 In the event that the breach was a result of an increase in both airport-related and non-airport related emissions, the Mitigation Plan will set out a proportionate response from the airport operator, relative to their contribution to any breach and the significance of the airport-related impact, to support any interventions to be taken by the relevant local authority. These could include off-airport schemes to encourage modal shift such as walking and cycling enhancements on local roads or provision of bus priority measures, or streetscape improvements such as additional planting and tree cover that change the dispersion of pollutants.

3.3.27 Where mitigation would need to be delivered by a third party and is therefore outside the control of the airport operator, growth may be allowed to continue

subject to an agreed and proportionate contribution by the airport operator to the mitigation being delivered, as approved by the ESG.

- 3.3.28 It is proposed that air quality monitoring will take place continually, and final results reported annually. Traffic monitoring may be required should the monitoring results show that the forecast effects had been exceeded, to allow further analysis to be completed by the Air Quality Technical Panel. All air quality monitoring data will be publicly available and reported. Further detail on monitoring is provided in **Appendix D** of the **GCG Framework [TR020001/APP/7.08]**.

Air Quality Limit review

- 3.3.29 It is acknowledged that UK legal limits for the three pollutants in scope for GCG could change in future, and new interim targets are likely to be published once the deadlines for those interim targets set out in the Environmental Improvement Plan are reached. It is proposed that if legal limits or interim targets change, this will trigger a review of GCG Air Quality Limits and Thresholds. It is proposed that this review should be carried out by the airport operator within six months of new legal limits being published, and the findings of this review should be submitted to the Air Quality Technical Panel and the ESG for comment. Such a review cannot introduce new pollutants to the GCG Framework (notwithstanding the need to comply with any new legal requirements introduced as part of future legislation).
- 3.3.30 This review will consider:
- a. The extent to which the airport is contributing to concentrations of pollutants relative to new legal Limits;
 - b. The extent to which the airport should provide additional mitigation (proportionate to its impact);
 - c. How this proportionate impact can be incorporated into a revised Operational Air Quality Plan (which is secured separately through Requirement 32 of the **DCO [TR020001/APP/2.01]**) – i.e. outside of GCG; and
 - d. Whether it is appropriate to revise Limits to align with the new UK legal limits (or interim targets); however, there will be no absolute requirement to do so.
- 3.3.31 Where changes to Limits are proposed, this would also require a review of the relevant pollutant(s) at each of the locations in Table 3.4 (including those out of scope), in order to determine if any locations would move in or out of scope. This review will also need to consider the appropriateness of proposed monitoring equipment specified as part of the Air Quality Monitoring Plan included as **Appendix D** to the **GCG Framework [TR020001/APP/7.08]** with respect to any new Limit(s).
- 3.3.32 It is acknowledged that the approach taken to air quality in GCG relies on forecasts, and that the longer in time a forecast is into the future, the more inherent uncertainty there is in the results derived from this approach. This

uncertainty is managed, as detailed in the ES, through conservative use of background concentrations and model verification.

- 3.3.33 To go further than this in order to address any issues arising from this inherent uncertainty it is proposed that, starting from 2027, a five-yearly review of pollutants at each of the locations in Table 3.4 (including those out of scope) must be carried out by the airport operator (aligned to the first reduction in PM_{2.5} Limit). If the total concentrations are no more than 20% higher than was forecast in the ES (where the Limit has not reduced), no further action is required. Where the concentration of any given pollutant is 20% or more higher than was forecast, this will trigger a review of whether this location should be brought into scope of GCG. Where the Limit has reduced, or will do before the next five-yearly review, the airport-related contributions (in percentage terms, relative to the new, lower Limit) must be recalculated to identify if any locations should be brought into scope of GCG.
- 3.3.34 On the basis of the air quality assessment summarised in Table 3.4, eight locations are in scope for GCG for NO₂ only up to Phase 2a, when airport passenger throughput reaches 27 mppa. Similarly, for PM_{2.5} three locations are in scope from 2040 only when the UK legal limit reduces to 10 µg/m³.
- 3.3.35 Therefore, a review of pollutant concentrations will be carried out to determine whether any locations should remain in scope of GCG when airport passenger throughput reaches 27 mppa, and within six months of the new limit coming into force in 2040, provided that a periodic review pursuant to Paragraph 3.3.33 has not been carried out in the preceding 24 months.
- 3.3.36 A report setting out the process and outcomes of any review will be submitted to the ESG within six months of the review being triggered. The ESG will review this submission (involving the Air Quality Technical Panel where needed) and respond in writing within one month of submission.
- 3.3.37 Further to this five yearly review process, an additional review process applies for Phase 2a to determine if new locations should be brought in scope for GCG. Where an air quality Level 2 Threshold (or Limit) at an out of scope location has been exceeded, then a review of the airport's contribution to any increase in the pollutant concentration at that location will be carried out by the airport operator. This review will be included as part of the annual Monitoring Report for the year in which the exceedance occurred (unless otherwise agreed with the ESG that more time is required).
- 3.3.38 The criteria applied as part of that review for determining whether a location should change from out of scope to in scope will be the same as those applied originally for determining in scope vs out of scope monitoring locations (as described in paragraphs 3.3.7 – 3.3.11 previously), with reference to the IAQM guidance on describing air quality impacts reproduced at [Table 3.2](#) ~~Table 3.2~~ – i.e. locations where total airport impacts have remained negligible will remain out of scope.
- 3.3.39 This review process for Phase 2a is summarised in [Figure 4.10](#) ~~Figure 4.10~~.

Figure 4.10: Proposed approach to monitoring and review of out of scope location in Phase 2a

Activity	Year 1	Year 2	Year 3 on
Ongoing monitoring of out of scope locations			
Exceedance of Level 2 Threshold identified at out of scope location		♦	
Review of out of scope location where exceedance is identified			
Year 1 Monitoring Report submitted – decision on whether to bring into scope*		♦	
Monitoring of location(s) brought into scope			
Year 2 Monitoring Report submitted – if location brought into scope, GCG process applies			♦

*Decision on bringing location into scope based on extent of airport impacts – where these remain negligible the location will remain out of scope

3.4 Greenhouse Gases

Approach

- 3.4.1 Climate change is one of the most urgent concerns currently faced by society and the aviation sector must play its part in decarbonisation and achieving net zero. As outlined in paragraph 1.2.9, the UK Government has published a number of policies including the Jet Zero Strategy to decarbonise aviation. The Jet Zero Strategy commits to decarbonising the aviation sector by 2050, with a GHG emissions trajectory for aviation that results in emissions peaking in 2019. Through the Jet Zero Strategy, the government has also set a target for all domestic flights to be net zero by 2040, and an ambition for airport operations to be zero emission by 2040. As set out in Paragraphs 3.4.23 to 3.4.31, the Government's sector-wide approach to decarbonisation of aviation means aviation GHG emissions are proposed to be excluded from the GCG Framework.
- 3.4.2 The Applicant is determined that the airport should play its role in decarbonising UK transport and the economy generally. Luton Rising's Sustainability Strategy, updated and published in January 2022, sets out its commitment to achieve net zero¹³ for airport operations from 2040, and carbon neutral¹⁴ surface access by 2040. Alongside the Sustainability Strategy, the Applicant sees GCG as a key part of managing the GHG emissions arising from the airport.

¹³ Net Zero is achieved when all residual CO₂ emissions are balanced by carbon removal offsets, in line with the UN Intergovernmental Panel on Climate Change (IPCC).

¹⁴ Carbon neutral is achieved when all residual CO₂ emissions are balanced by carbon reduction offsets, in line with British Standard (BSI) PAS 2060.

- 3.4.3 GHG emissions have been forecast to determine the effect of expansion on climate change. All GHG emissions from the Proposed Development are calculated and reported in **Chapter 12** of the **Environmental Statement [TR020001/APP/5.01]** as tCO_{2e} (tonnes of carbon dioxide equivalent). This analysis accounts for the seven GHGs included in the UN Kyoto Protocol¹⁵.
- 3.4.4 Carbon dioxide equivalent (CO_{2e}) is a measure used to compare the emissions from various GHGs on the basis of their global-warming potential (GWP). CO_{2e} is calculated by converting amounts of other gases to the equivalent amount of carbon dioxide, taking account of how long it remains active in the atmosphere.
- 3.4.5 When reporting GHG emissions, it is normal practice to classify emissions as either Scope 1, 2 or 3. Scope 1 emissions are 'direct' emissions that arise from the use of company-owned resources. This includes emissions as a result of any fuel that is burnt on site, for example emissions from company-owned petrol or diesel vehicles.
- 3.4.6 Scope 2 emissions are 'indirect' emissions that occur as a result of activity by other companies to produce energy that is purchased by the reporting company (in this case, the airport). This primarily relates to the use of electricity that is purchased from off-site sources.
- 3.4.7 Scope 3 emissions are all other 'indirect' emissions related to company activity. For an airport, the two main sources of Scope 3 emissions are surface access (passengers and staff travelling to or from the airport) and aviation (emissions arising from flights), although some other Scope 3 emissions are included within the Airport Operations category.
- 3.4.8 For the purposes of GCG, Scope 1 and 2 emissions have been considered separately to Scope 3 emissions.
- 3.4.9 Since Scope 1 and 2 emissions are those directly within an airport operator's control, it is considered appropriate for a Limit to be placed on gross Scope 1 and Scope 2 GHG emissions associated with airport operations. This means that compliance with the GCG Limit will be based on monitored and reported emissions, with no ability to use carbon offsetting.
- 3.4.10 Scope 3 emissions however, by definition, are not within the airport operator's direct control (although they are able to indirectly influence these). The **Sustainability Statement [TR020001/APP/7.06]** and **Surface Access Strategy [TR020001/APP/7.12]** outline the steps that the Applicant is taking to, for example, incentivise the use of public transport and electric or other low emissions vehicles for travel to and from the airport. However, the wider rate of uptake of electric vehicles will be driven by factors such as the wider roll-out of charging infrastructure across the UK, the nature and extent of any subsidies introduced by government to encourage the purchase of electric vehicles, and wider societal factors.
- 3.4.11 As such, it is proposed that where any Scope 3 emissions are incorporated into the GCG Framework they should be expressed as a net Limit, inclusive of any

¹⁵ Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

offsetting that the airport operator may choose to implement. This will allow the airport operator to take steps to ensure that carbon emissions, net of any offsetting, remain within the GCG Limit even where issues beyond their control have affected their ability to limit gross GHG emissions.

- 3.4.12 It should be noted that research (Ref 3.6) suggests that in the medium term, the anticipated cost of carbon offsets will increase significantly. This increased cost of offsets will in turn act as an additional incentive for the airport operator to implement measures to decarbonise surface access, whilst acknowledging that there are aspects of decarbonisation that they cannot easily control or influence.
- 3.4.13 In determining how the airport can use carbon offsets to meet the Scope 3 Limits, regard has been had to ACA guidance (Ref 3.7). Offsets used to meet the Scope 3 Limits should meet key offsetting principles, i.e. they should be:
- a. additional (i.e. that the offset project and resulting emissions reductions would not have occurred in the absence of the offset project and the revenue from selling offsets);
 - b. monitored, reported and verified;
 - c. permanent and irreversible;
 - d. without leakage (i.e. they do not cause increased GHG emissions outside the project boundary);
 - e. with a robust accounting system to prevent double counting of offsets; and
 - f. without negative environmental or social externalities.
- 3.4.14 It is not considered appropriate to restrict offsets to a specified list of accreditation schemes as the ability to revise the offsetting strategy in the future as best practice evolves will lead to better environmental outcomes. However, at the time of writing the following offset programmes are considered to meet the above criteria:
- a. Clean Development Mechanism
 - b. Verified Carbon Standard
 - c. Gold Standard
 - d. Climate Action Reserve
 - e. American Carbon Registry
 - f. UK Woodland Carbon Code
- 3.4.15 Where reasonably practical, and in line with the principles outlined in Paragraph 3.4.13, the airport will seek to utilise local offsetting schemes that can deliver environmental benefits to the areas around the airport.
- 3.4.16 **Chapter 12** of the **Environmental Statement [TR020001/APP/5.01]** considers the effect of GHG emissions associated with an expanded airport. This is reported in four categories, which are summarised in Table 3.6.

Table 3.6: GHG emissions sources arising from the Proposed Development

Activity	GHG emission sources
Construction	<ul style="list-style-type: none"> a. emissions from fuel/electricity used by vehicles, plant, facilities and equipment during construction works; b. embedded carbon in materials used for the construction of the Proposed Development; c. emissions from fuel used for the transportation of materials and construction workers; d. emissions from fuel used for the transportation and treatment of construction related waste (including demolition, excavation and land clearance); e. emissions from the provision of water and treatment of wastewater; and f. emissions associated with land use change e.g. removal of carbon stock within soil and vegetation for the Proposed Development or addition of greenspace transformation from greenfield site to development.
Airport operations	<ul style="list-style-type: none"> a. emissions from fuel/electricity use for buildings, assets and other infrastructure; b. emissions from fuel/electricity use for landside and airside owned and third-party vehicles and equipment (excluding staff travel to and from work, which is reported under surface access); c. emissions from the disposal/treatment of operational waste; and d. emissions from the provision of water and treatment of wastewater.
Surface access journeys	<ul style="list-style-type: none"> a. emissions from the transportation of passengers to/from the airport; b. emissions from the transportation of staff to/from the airport; and c. Emissions from the electricity use for the operation of the Luton DART.
Air traffic movements (ATMs)	<ul style="list-style-type: none"> a. emissions from aircraft fuel consumption during the landing take-off cycle (including descent/ascent up to 3000ft); and b. emissions from aircraft fuel consumption during the climb, cruise, descent phase of flight (i.e. above 3000ft, includes aircraft departing from the airport only to avoid double counting of emissions with other airports).

3.4.17 The appropriateness of including each of the four emission sources within the GCG Framework has been considered during the development of GCG.

3.4.18 GHG emissions associated with construction activity will not occur in proportion to the rate of airport growth, and embedded mitigation is secured through the design of the Proposed Development, as set out in the **Greenhouse Gas Action Plan** in **Appendix 12.1** of the **Environmental Statement**

[TR020001/APP/5.02]. Construction emissions are therefore not included within the GCG Framework.

- 3.4.19 Airport Operations emissions are included within the GCG Framework, with separate Limits and Thresholds associated with Scope 1 and 2, and Scope 3 emissions. For consistency with the Environmental Statement and the carbon reporting currently undertaken by the airport operator in accordance with the requirements of the Airport Carbon Accreditation (ACA) scheme, Airport Operations encompasses the following activities:
- 3.4.20 Scope 1 and Scope 2 emissions:
- a. emissions from generation of grid electricity consumed at the airport by the airport operator^{16,17};
 - b. emissions from the combustion of natural gas consumed at the airport by the airport operator¹⁸;
 - c. emissions from the combustion of liquid fuel consumed at the airport (including for on-airport fire training)¹⁸;
 - d. emissions from the combustion of fuel used in Internal Combustion Engine (ICE) airport vehicles¹⁸;
 - e. emissions from the generation of electricity used to charge electrically powered airport vehicles¹⁶;
 - f. on-airport fugitive refrigeration emission; and
 - g. emissions from airport usage of de-icer.
- 3.4.21 Scope 3 emissions:
- a. emissions from generation of grid electricity consumed at the airport by third parties^{16,17};
 - b. emissions from transmission and distribution losses associated with grid electricity (including that used to charge electrically powered airport vehicles) consumed at the airport by third parties;
 - c. emissions from the combustion of liquid fuel consumed at the airport by third parties¹⁸;
 - d. emissions from the combustion of fuel used in Internal Combustion Engine (ICE) third party vehicles¹⁸;
 - e. emissions from the generation of electricity used to charge electrically powered third party vehicles¹⁶;

¹⁶ These emissions are Scope 2 where emissions arise from activity under the direct control of the airport operator, and Scope 3 where they arise from activity that is not under the airport operator's direct control, for example electricity consumed by a tenant that is subject to separate metering.

¹⁷ This excludes electricity use associated with the charging of electric vehicles, include any potential future electrically powered aircraft. This is to avoid double-counting emissions, given that emissions associated with EV charging are accounted for separately.

¹⁸ These emissions are Scope 1 where emissions arise from activity under the direct control of the airport operator, and Scope 3 where they arise from activity that is not under the airport operator's direct control, for example the use of ICE vehicles by a third party with an operational presence at the airport.

- f. emissions from aircraft engine tests;
- g. emissions from business travel by employees of the airport operator;
- h. emissions from the processing of on-airport waste;
- i. emissions from the processing of on-airport wastewater; and
- j. emissions from the third party usage of de-icer.

- 3.4.22 Luton Rising has set out its ambitions in relation to surface access GHG emissions in its Net Zero Strategy, published in January 2022. As such, it is proposed that the GCG Limit for surface access responds to this ambition and that, as shown in [Table 3.7](#)~~Table 3.7~~, the GCG Limit requires carbon neutrality in this area from 2040.
- 3.4.23 It is proposed to exclude Scope 3 aviation GHG emissions from the GCG Limit in the context of the UK Emissions Trading Scheme (UK ETS), launched in January 2021, and the commitment in the Jet Zero Strategy to fully implement the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) in the UK by 2024¹⁹.
- 3.4.24 The UK ETS introduces a ‘cap and trade’ approach to the management of GHG emissions. A cap is set on the overall amount of Greenhouse Gases that can be emitted by the sectors covered by the scheme, which includes aviation.
- 3.4.25 Within this overall cap, participants (i.e. airlines, shipping companies, and power generation companies) can buy, sell or trade emissions allowances, allowing increases in one sector to be offset by reductions elsewhere without breaching the overall cap. Through the publication of the recent Jet Zero Strategy, the UK government has committed to introducing a trajectory for the UK ETS that allows the UK to reach net zero in 2050.
- 3.4.26 The UK ETS will sit alongside CORSIA, which is the first worldwide carbon offsetting scheme to address global emissions in a single sector. CORSIA requires participating states to offset any growth in international aviation GHG emissions above 2019 levels. From 2023, 114 states will participate in CORSIA, representing nearly 80% of international aviation activity and covering the vast majority of destinations currently served by the airport.
- 3.4.27 Given that an external offsetting mechanism exists in the form of the UK ETS, and that compliance with it is a legal requirement for airlines, it is not believed that provision of this mechanism through the GCG Framework would be appropriate, as the Government has confirmed its position that aviation emissions are best dealt with at a national level.
- 3.4.28 In addition, setting a GCG Limit that goes beyond the ambition of the UK ETS may lead to undesirable outcomes both for the airport and the wider environment. Any further reduction in allowable emissions arising from such a Limit would result in fewer aircraft operators using their UK ETS emissions allowances to operate flights to or from the airport. They will however be free to use these allowances to operate to or from other airports.

²²Department for Transport (2022) Jet Zero Strategy – Delivering net zero aviation by 2050

- 3.4.29 As such, any decreases in GHG emissions from flights operating to or from the airport would simply be offset by equivalent increases elsewhere. This would not help the UK meet its goal of achieving net zero by 2050, nor would it help to address the global effects of climate change. It could also lead to longer surface transport journeys overall as people travel to less convenient airports for flights that might otherwise have been offered at Luton, resulting in greater energy use and therefore GHG emissions.
- 3.4.30 The Applicant remains committed to supporting the industry to decarbonise, and the **Sustainability Statement [TR020001/APP/7.06]** sets out the steps the airport is taking both to embed measures to reduce greenhouse gas emissions directly into the Proposed Development, as well as to future-proof its proposals to help support the future implementation of new technology.
- 3.4.31 It is however, proposed to incorporate Scope 3 emissions related to surface access within the GCG Limit for GHG emissions, given that no equivalent to the UK ETS exists for road transport or rail as yet. This goes beyond what is proposed by the UK government through their Jet Zero proposals, and shows the extent of the Applicant's ambition to minimise GHG emissions from the airport.

Limit and Thresholds

- 3.4.32 A summary of the proposed approach to the GCG Limits for GHG emissions is set out in Table 3.7~~Table 3.7~~.

Table 3.7: GCG Limits and Thresholds for GHG emissions

Limit	Limit Values (tCO ₂ e/yr)			
	Phase 1	Phase 2a	Phase 2b	Full Operating Capacity
Airport Operations CO ₂ e emissions (Scope 1 and Scope 2, no offsetting permitted) ²⁰	Limit			
	<i>Note that as per Paragraph 3.4.40 these Limits (and Thresholds) will be reviewed to align with the Jet Zero Strategy ambition of zero-emissions airport operations by 2040</i>			
	7,644	4,969	280	280
	Level 2 Threshold			
	7,262	4,721	266	266
	Level 1 Threshold			
	6,880	4,472	252	252
Airport Operations CO ₂ e emissions (Scope 3, offsetting allowable)	Limit			
	<i>Note that as per Paragraph 3.4.40 these Limits (and Thresholds) will be reviewed to align with the Jet Zero Strategy ambition of zero-emissions airport operations by 2040</i>			
	8,938	7,204	2,884	2,699
	Level 2 Threshold			
	8,492	6,844	2,739	2,564
	Level 1 Threshold			
	8,045	6,484	2,595	2,429
Surface Access CO ₂ e emissions (Scope 3, offsetting allowable)	Limit			
	<i>Note that from 2040 onwards, the Limit (and Thresholds) will be zero, irrespective of which Phase the airport is in</i>			
	199,440	199,440	114,179	86,557
	Level 2 Threshold			
	189,468	189,468	108,470	82,229
	Level 1 Threshold			
	179,496	179,496	102,761	77,901

²⁰ Subject to the Jet Zero Strategy review as outlined at Paragraph 3.4.40

Figure 3.11: Airport Operations CO₂e emissions (Scope 1 and Scope 2)

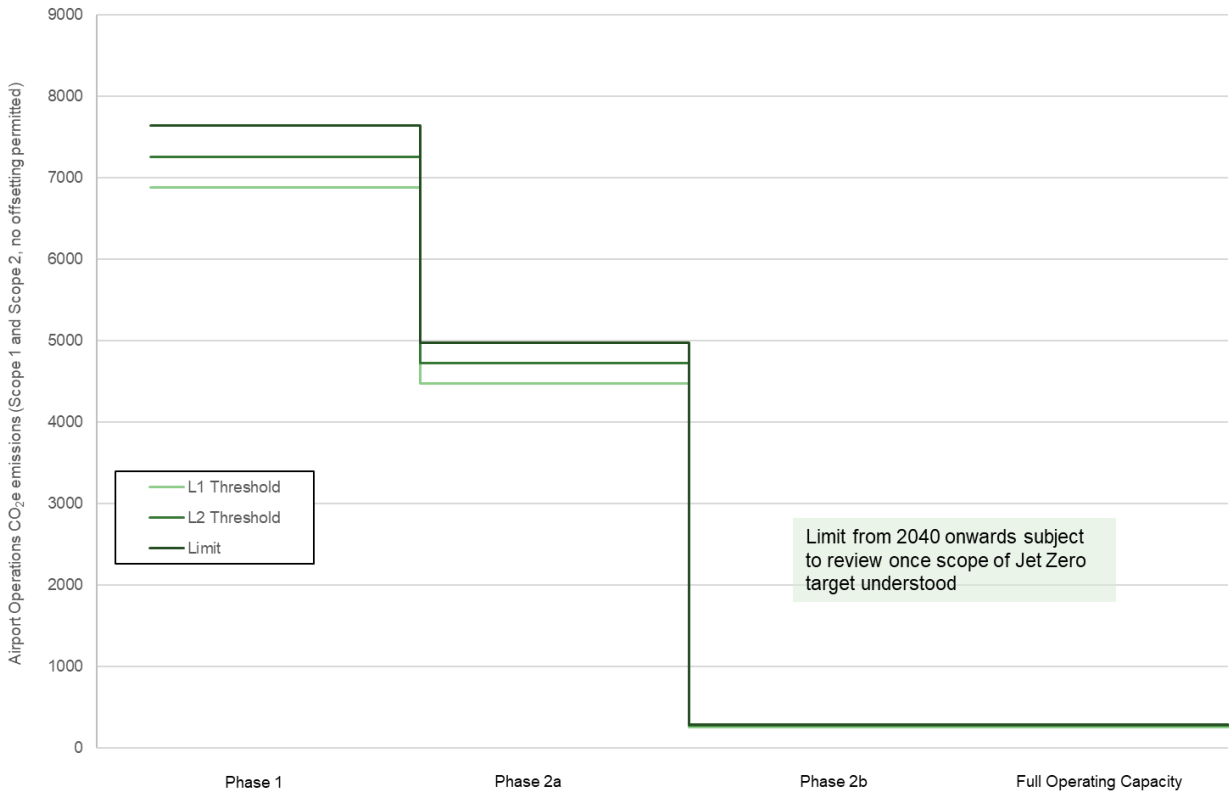


Figure 3.12: Airport Operations CO₂e emissions (Scope 3, inclusive of offsetting)

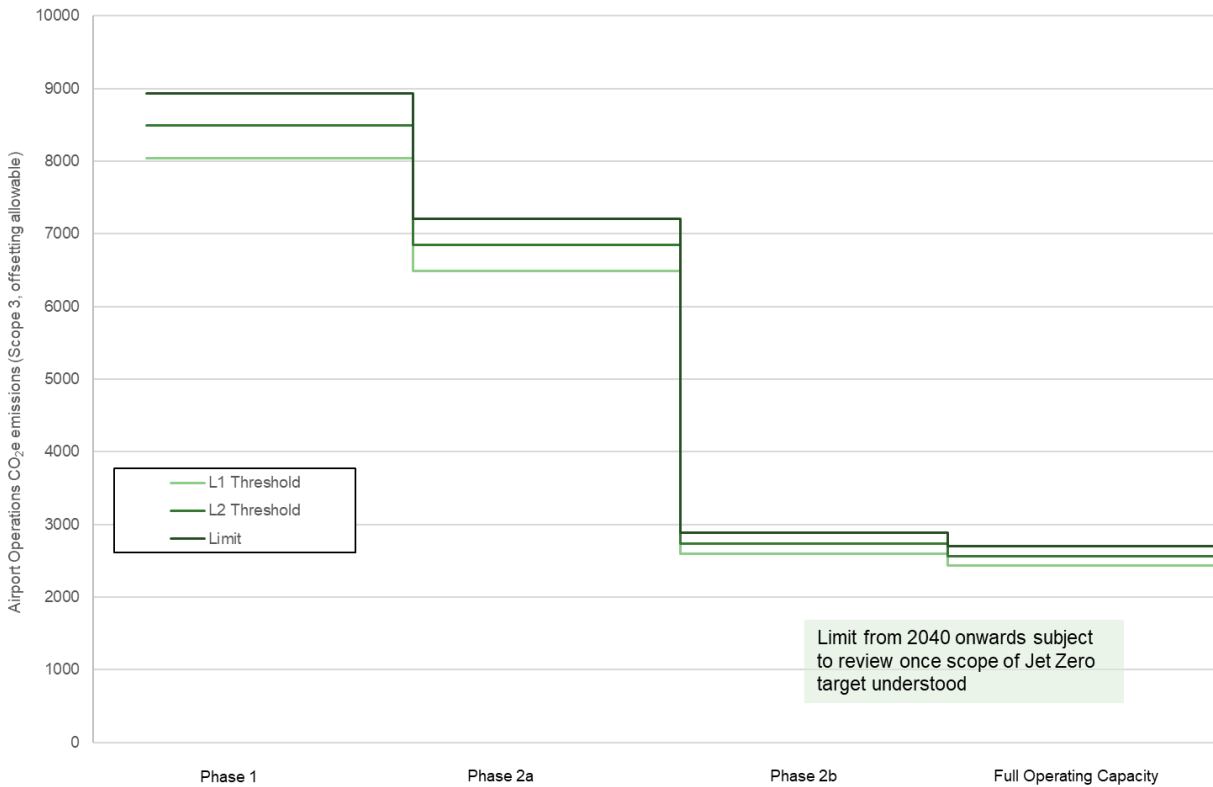


Figure 3.13: Surface Access CO₂e emissions (Scope 3, inclusive of offsetting)



- 3.4.33 Each of the three Limits outlined above is expressed on an aggregate basis, e.g. for surface access, the Limit applies to combined emissions from passenger and staff travel, rather than two separate Limits applying to the two separate aspects of surface access.
- 3.4.34 For Scope 3 emissions, where gross emissions exceed the Level 2 Threshold or Limit, the expectation is that the airport operator will use offsets to achieve a net level of emissions at or below the Level 2 Threshold.
- 3.4.35 The timing of the purchase of offsets can take place in one of two ways:
 - a) before the end of an annual monitoring period, prior to the submission of a Monitoring Report to the ESG; or
 - b) included as a mitigation measure in a Level 2 Plan or Mitigation Plan.
- 3.4.36 In the first scenario, use of offsets must be reported within the Monitoring Report as described as Paragraph E3.1.3 of the Greenhouse Gases Monitoring Plan included as **Appendix E** of the **GCG Framework [TR020001/APP/7.08]**. The purchasing of offsets at this point would negate the requirement for the airport operator to produce a Level 2/Mitigation Plan, as the reduction in net emissions to below the Level 2 Threshold or Limit would be reflected in the Monitoring Report.
- 3.4.37 In the second scenario, the Level 2 Plan or Mitigation Plan would need to set out how much offsetting is required, the intended scheme(s) and when the offsets will be purchased by. Provided the plan for the purchase of offsets is in

accordance with the principles set out in this section on the use of offsets, the ESG should approve the Level 2 Plan or Mitigation Plan. However, the restrictions placed on capacity growth by the breaching of a Level 2 Threshold would remain in place until the Level 2 Plan is approved. The restrictions placed on capacity growth and slot allocation by the breaching of a Limit would remain in place until offset purchasing has decreased the relevant net emissions to a value below the Limit.

- 3.4.38 Emissions will be calculated retrospectively on an annual basis, based on data logged around airport operations and surface access. All monitoring, calculation and reporting will be carried out in accordance with the Greenhouse Gas Monitoring Plan included at **Appendix E** of the **GCG Framework [TR020001/APP/7.08]**, which follows guidance on monitoring and reporting published by the Airport Carbon Accreditation scheme. This includes a requirement to provide a minimum set of information about any carbon offsets used to meet Scope 3 Limits.

GHG Limit Review

- 3.4.39 Both the Jet Zero Strategy and Decarbonising Transport: A Better, Greener Britain include an ambition to achieve zero emissions airport operations by 2040, and the Jet Zero Strategy includes a commitment to publish a Call for Evidence to gather further information to support further development of the definitions used in this ambition.
- 3.4.40 Given the current uncertainty around the definitions used for the target, the airport operations Limits outlined in ~~Table 3.7~~ do not currently reflect this. However, through GCG the applicant is committing to undertake a review of both the definition of ‘airport operations’ and the associated Limit from 2040 onwards within three months of government clarifying the scope and pathway to achieving this policy ambition.
- 3.4.41 As part of the periodic GCG review process set out in Paragraphs 2.2.50 and 2.2.51, consideration should also be given to the appropriateness and practicality of revising the Greenhouse Gases Limits and Thresholds to align with current greenhouse gas policies; however, there will be no absolute requirement to do so.

3.5 Surface Access

Approach

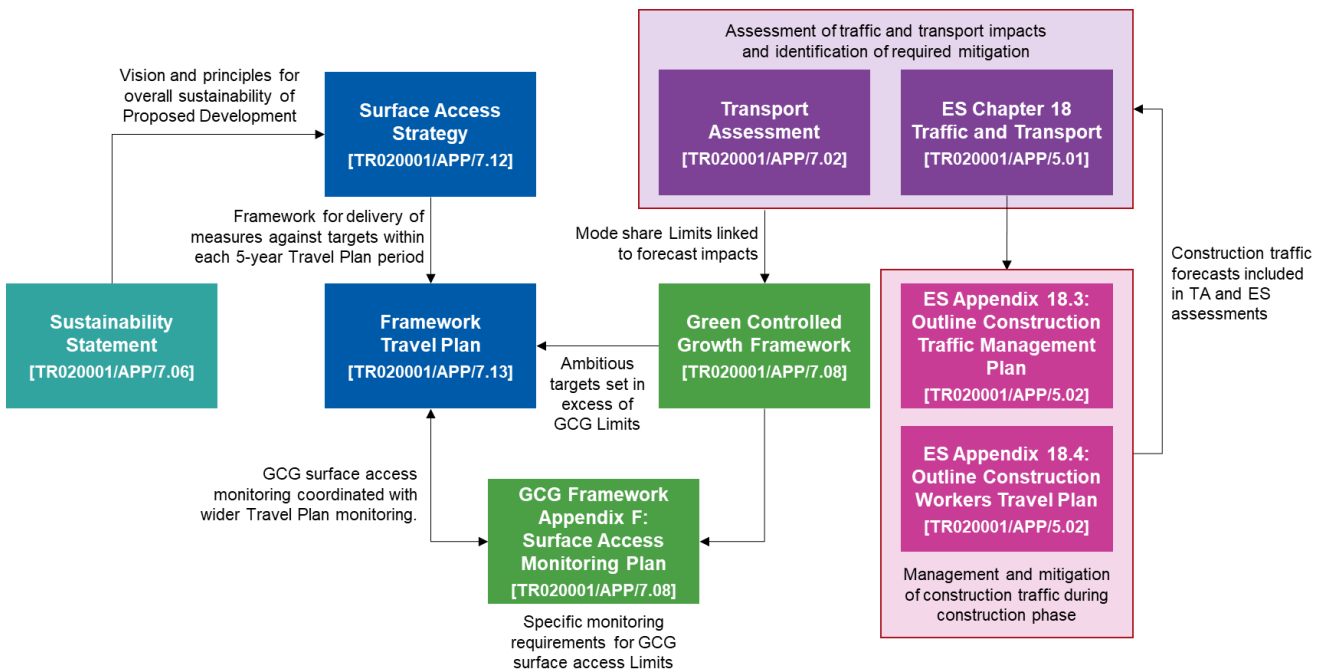
- 3.5.1 Surface access refers to the trips made by passengers and staff to and from the airport that are made by different types of transport. This includes travelling to or from the airport by public transport, taxis, cars, walking and cycling. It does not include trips by aircraft (e.g. transfer passengers).
- 3.5.2 As the airport grows, there will be an increase in travel demand to and from the airport which needs to be carefully managed to reduce the impact on surrounding communities and the environment. This will require investment in new transport connections, particularly public and active transport, changes in travel behaviour and investment in sustainable transport solutions.

- 3.5.3 In the context of the GCG Framework, the focus of the surface access Limits is on the trips made by passengers and staff travelling to and from the airport. Surface access, and road traffic in particular, also plays a central role in the environmental impact of expansion; most notably, with regard to air quality and GHG emissions. Compliance with the air quality and surface access GHG Limits set out previously is also therefore closely linked to how successful the uptake of sustainable modes of transport is.
- 3.5.4 The GCG surface access Limits are also only one part of the overall approach to assessing, monitoring, managing and mitigating surface access impacts as a result of the expansion of the airport.
- 3.5.5 The application for development consent includes a detailed **Transport Assessment [TR020001/APP/7.02]**, which assesses the impacts of the airport expansion on all transport modes, proposes measures to mitigate the impacts and assesses the operation of the mitigated transport network. This assessment is based on detailed transport modelling, which utilises assumptions around the 'reasonable worst case' levels of future travel demand to identify the mitigation required. Alongside the Transport Assessment, **Chapter 18** of the **Environmental Statement [TR020001/APP/5.01]** assesses the likely significant transport-related effects (severance, pedestrian delay and amenity, road safety etc.) of the Proposed Development. Other Chapters of the Environmental Statement also make reference to surface access where relevant, including air quality and GHG emissions.
- 3.5.6 Construction traffic impacts will be managed during the construction phase through dedicated management plans, including:
- a. **Environmental Statement Appendix 18.3: Outline Construction Traffic Management Plan [TR020001/APP/5.02]**; and
 - b. **Environmental Statement Appendix 18.4: Outline Construction Workers Travel Plan [TR020001/APP/5.02]**.
- 3.5.7 The **Surface Access Strategy [TR020001/APP/7.12]** covers a 20-year period and is therefore more strategic in nature, helping to shape and guide the long-term growth of the airport with a clear vision and objectives for surface access. The Surface Access Strategy will be supported by the preparation of Travel Plans, produced every 5 years, which will set out the specific objectives, targets and interventions for surface access during that shorter time period. The **Framework Travel Plan [TR020001/APP/7.13]** provides the basis of the required content and structure of the future, periodic Travel Plans, which will be informed by data collection, ongoing monitoring and performance against a range of targets.
- 3.5.8 The production of these Travel Plans will be secured separately to GCG through a requirement of the **DCO [TR020001/APP/2.01]**. Travel Plans will contain the results of ongoing monitoring and consider comments and views from stakeholders including the Airport Transport Forum (ATF) and London Luton Airport Consultative Committee (LLACC).

3.5.9 The targets within the Travel Plans must also be more extensive and ambitious than the GCG surface access Limits, which are linked to the ‘reasonable worst case’ assumptions of the **Environmental Statement [TR020001/APP/5.01]** and **Transport Assessment [TR020001/APP/7.02]**. In this way, the GCG Framework will ensure that the forecast effects of the Environmental Statement are not exceeded, and the Travel Plan will drive the ambition of the airport and its operator to not just meet the Limits, but exceed them. Further details on how the targets within the Travel Plans will be set for each five-year period, and the consequences for not meeting those targets is set out in the **Framework Travel Plan [TR020001/APP/7.13]**.

3.5.10 The interrelation between the various surface access documents submitted as part of this application for development consent is set out in [Figure 3.14](#) ~~Figure 3.14~~.

Figure 3.14: Surface access document map



Limits and Thresholds

- 3.5.11 The GCG Framework includes two surface access Limits to control changes in mode share, as set out in Table 3.8, in addition to the GHG Limit for surface access emissions previously set out in ~~Table 3.7~~ ~~Table 3.7~~. The two mode share Limits include maximum percentage mode shares for ‘non-sustainable’ passenger travel and ‘non-sustainable’ staff travel not to be exceeded. These Limits therefore function to promote the uptake of ‘sustainable’ travel, including public transport and active travel and are consistent with the mode shares for passengers and staff utilised within the surface access modelling, further details of which are reported in the **Transport Assessment [TR020001/APP/7.02]**.
- 3.5.12 The detailed definitions of ‘sustainable travel’ and ‘non-sustainable travel’ in the context of passenger and staff travel are given in Paragraph 3.5.17 below. However, there are slight variations between passengers and staff to reflect the different characteristics of the two journey purposes.
- 3.5.13 Staff who car share as passengers (not drivers) have also been included within the staff sustainable travel definition and calculation of associated Limit value. As reducing the number of single-occupancy vehicle trips and increasing the percentage of staff car sharing will decrease the number of vehicle trips overall and therefore reduce impacts on the local highway network. Similarly, where trips are avoided entirely by staff working from home, these will also be included when considering compliance with Limit and Threshold. These definitions will be reflected in changes to the staff travel survey methodology, as set out in **Appendix F of the GCG Framework [TR020001/APP/7.08]**, to ensure that the required data can be collected to calculate a weighted average mode share.
- 3.5.14 Zero or ultra-low emission vehicles have not been included within the definition of sustainable travel, although it is recognised that these types of vehicles are considered by some as sustainable, due to the much-reduced tailpipe emissions compared to internal combustion engine powered vehicles. This is because an aim of the surface access Limits is to minimise the increase of additional vehicle trips on the local highway network and hence reduce congestion, which a transition solely to zero emissions vehicles does not achieve. Notwithstanding that, this transition is still important to reduce GHG emissions and ensure compliance with the GHG surface access Limit.
- 3.5.15 There are a range of airport-related businesses based in Luton, including those operating within and around the airport boundary. This includes staff employed directly by the airport operator, LLAOL, and other companies involved in the day-to-day running of the airport (e.g. food and beverage staff, ground handling staff, border force etc.). For the purposes of the GCG staff sustainable travel mode share Limit, only those staff with active airside or landside security passes are considered, as those are the staff that the airport operator has some measure of control over to affect travel behaviours. The **Framework Travel Plan [TR020001/APP/7.13]** will still seek to influence the wider population of staff employed around (but not on, or directly for) the airport – for example head office staff belonging to airline partners. This is considered a proportionate approach that links the level of control of the undertaker to change travel behaviours, with the potential consequences of breaching a Limit.

3.5.16 The Level 1 Thresholds and Level 2 Thresholds have been calculated relative to the ‘sustainable’ mode shares inferred by the ‘non-sustainable’ mode share Limits. Similar to other GCG topics, the Level 2 Threshold is set at 5% below the ‘sustainable’ mode shares and the Level 1 Threshold at 10% below. These are set out in Table 3.8 and shown graphically in [Figure 3.15](#) and [Figure 3.15](#).

Table 3.8: GCG Limits and Thresholds for surface access

Limit	Limit Values			
	Phase 1	Phase 2a	Phase 2b	Full Operating Capacity
Air passenger non-sustainable travel mode share	Limit			
	62%	60%	55%	55%
	Level 2 Threshold			
	60%	58%	53%	53%
	Level 1 Threshold			
	58%	56%	51%	51%
Airport staff non-sustainable travel mode share	Limit			
	70%	68%	64%	60%
	Level 2 Threshold			
	69%	66%	62%	58%
	Level 1 Threshold			
	67%	64%	61%	56%
Note: all Limit and Threshold values have been rounded to zero decimal places				

3.5.17 As part of these Limits, the following definitions are proposed:

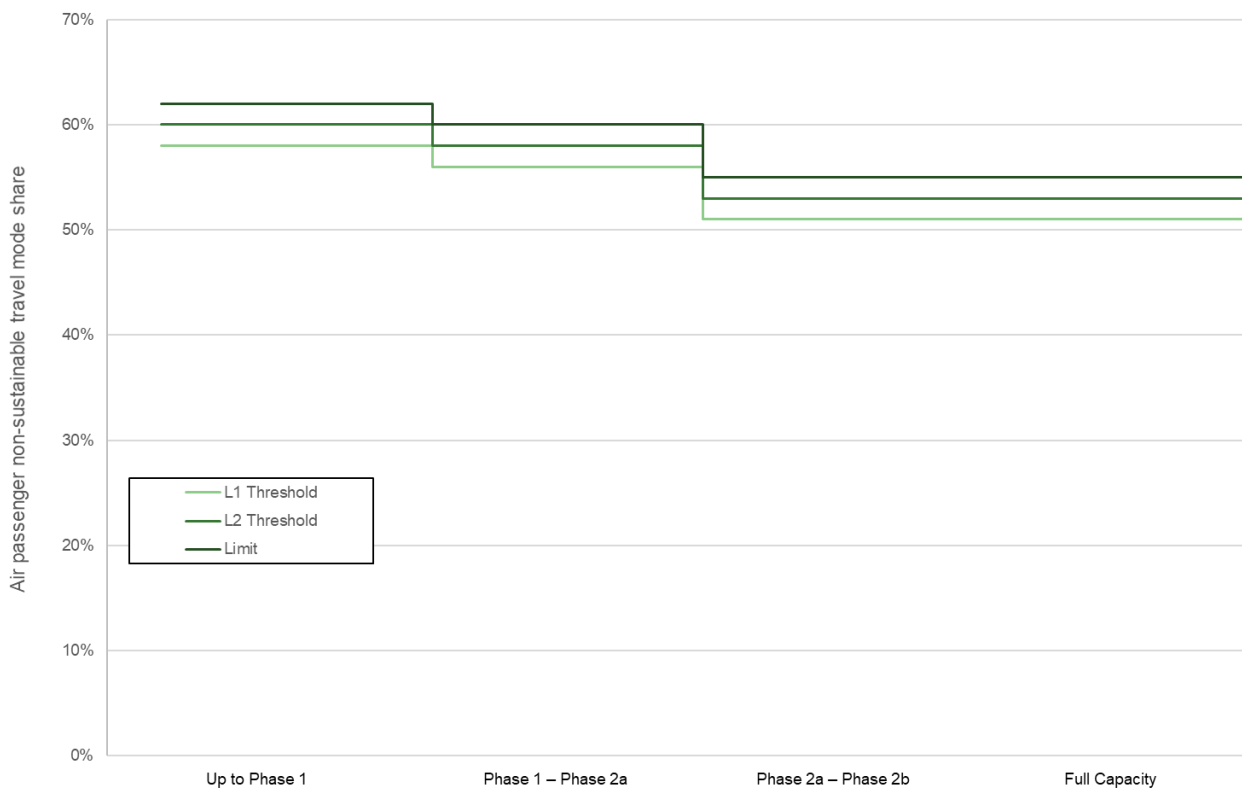
- a. “air passenger” only refers to non-transfer passengers;
- b. “airport staff” refers only to those employees holding an airside or landside security pass;
- c. “mode share” refers to the weighted percentage of passengers and staff travelling by different modes of transport;
- d. “passenger non-sustainable travel” refers to travel by car, taxi (hackney carriage), private hire vehicle (minicab/Uber etc)²¹, motorcycle, and any other modes, with the exception of minibus, bus, coach, rail and tube (also

²¹ Private Hire Vehicles (PHVs) must have fewer than nine passenger seats. Vehicles with nine or more passenger seats (e.g. minibuses, minicoaches) are not PHVs and are therefore considered as a ‘sustainable’ mode.

referenced as metro, subway, tram in the CAA survey), walking, wheeling²², cycling and other active travel modes (e-bikes, e-scooters etc);

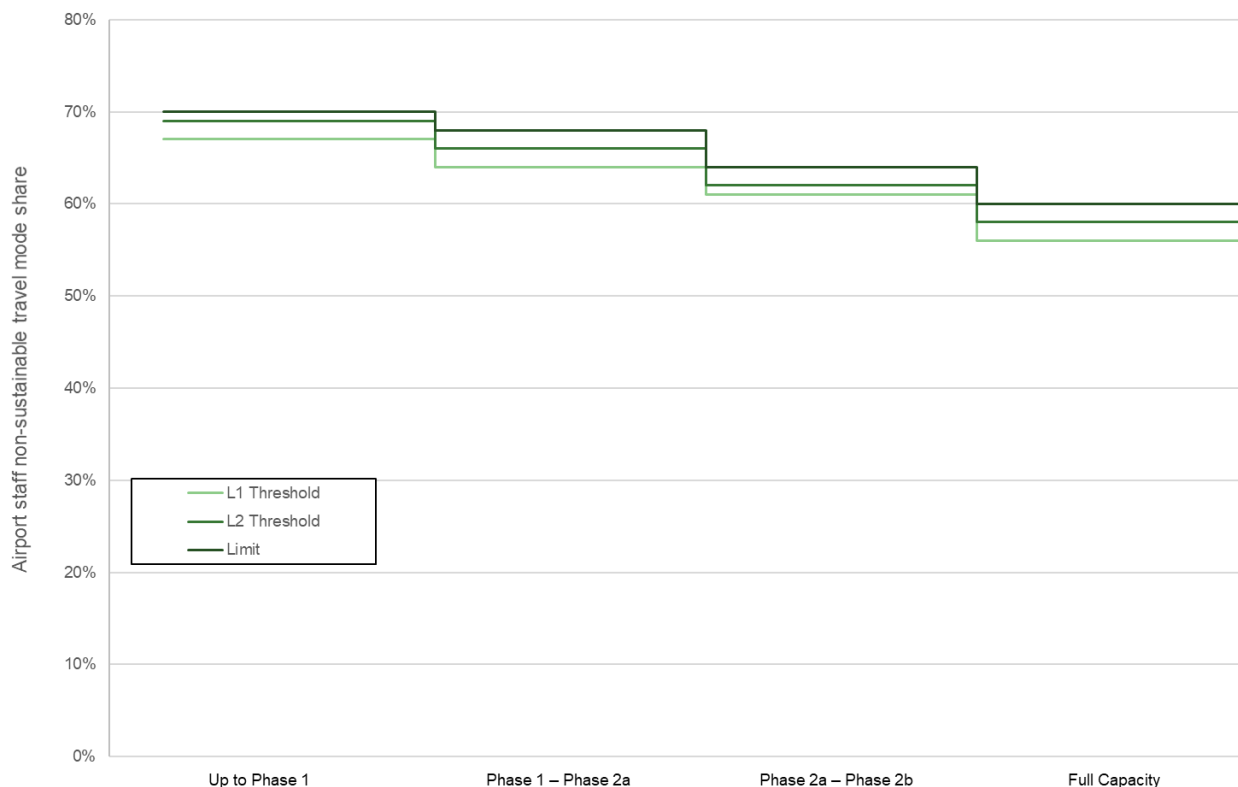
- e. “staff non-sustainable travel” refers to travel by car (drivers only), taxi (hackney carriage), private hire vehicle (minicab/Uber etc) and motorcycle, and any other modes, with the exception of minibus, bus, coach, rail and tube (also referenced as metro, subway, tram), car sharing (passengers only), walking, wheeling, cycling and other active travel modes (e-bikes, e-scooters etc). The number of days staff work from home vs at the airport will also be included within the weighted total mode share used to determine compliance with the Limit and Threshold.

Figure 3.15: Air passenger non-sustainable travel mode share Limits



²² Wheeling refers to an equivalent alternative to foot/pedestrian-based mobility for people who use wheeled mobility aids - for example a wheelchair or mobility scooter user. Wheeling is defined to only cover modes that use pavement space at a similar speed to walking. It does not include the use of e-scooters or cycles.

Figure 3.16: Airport staff non-sustainable travel mode share Limits



3.5.18 Monitoring of air passengers is undertaken on a quarterly basis by the CAA through the Departing Passenger Survey. This includes a number of questions related to passenger travel. It is then weighted/adjusted based on the sample of passengers surveyed, with ‘main mode’ and ‘final mode’ mode shares reported annually. This existing independent monitoring will form the basis of the required GCG monitoring for passenger mode share.

3.5.19 Compliance with the Limit will be based on analysis of the full underlying CAA dataset with appropriate adjustments to take account of ‘main mode’, rather than the currently reported summary of ‘main mode’. This will ensure that multi-legged journeys (e.g. driving to an off-site car park, with the final leg undertaken by shuttle bus) will be accurately reflected. Further detail on the required methodology is set out in the Surface Access Monitoring Plan in **Appendix F** of the **GCG Framework [TR020001/APP/7.08]**.

3.5.20 Monitoring of airport staff is currently undertaken through staff travel surveys every two years organised by the airport operator, typically using a third-party survey contractor. The frequency of these surveys will be increased to an annual basis, with slight changes to the survey methodology to be implemented to ensure the required level of detail is provided to calculate a weighted sustainable travel mode share for airport staff. Weighting will be based upon the total number of days individual staff typically travel to and from the airport by different modes of transport, to account for full vs part-time working, varying travel patterns throughout the year, and different working patterns (working from home etc).

- 3.5.21 Future staff travel surveys will be required to be undertaken by a third-party survey contractor, on behalf of the airport operator. Additional surface access monitoring is also specified as part of the **Framework Travel Plan [TR020001/APP/7.13]**, the results of which will be made available at the reasonable request of the Technical Panels and/or ESG to validate the results of staff travel survey.
- 3.5.22 Full details of the GCG surface access monitoring and reporting requirements are set out in **Appendix F** of the **GCG Framework [TR020001/APP/7.08]**.

Surface Access Limit review

- 3.5.23 To reflect the potential for technological changes in the future that could result in new modes of transport not otherwise listed in Paragraph 3.5.17, for example autonomous vehicles, the definitions of the surface access mode share Limits may be reviewed and an application made to the ESG to update them where necessary.

4 SUMMARY

- 4.1.1 Feedback from the 2019 statutory consultation and ongoing stakeholder engagement indicated a strong desire for the airport to be more ambitious with its approach to reducing and mitigating the environmental effects of expansion. One of the ways in which this has been done is through the development of the GCG Framework, which was consulted on as part of the 2022 statutory consultation.
- 4.1.2 The GCG Framework sets out a series of clearly specified 'Limits' for the individual environmental effects of the expanding, expanded, and lifetime operation of airport. The Limits are proposed for four environmental topics:
- a. aircraft noise;
 - b. air quality;
 - c. greenhouse gas emissions; and
 - d. surface access.
- 4.1.3 The aircraft noise element of the GCG Framework also fulfils the purpose of a Noise Envelope in line with required policy and guidance.
- 4.1.4 The key elements of the legally binding GCG Framework are:
- a. limits on environmental effects in four key areas;
 - b. a series of processes to be followed as environmental effects reach Thresholds defined below these Limits;
 - c. ongoing monitoring of the actual environmental effects of expansion and operations at the airport;
 - d. independent oversight of environmental effects associated with the operation of the airport; and
 - e. an explicit commitment to link environmental performance to growth at the airport.
- 4.1.5 Independent oversight has been secured through the establishment of a new body called the Environmental Scrutiny Group (ESG), who will oversee the monitoring and reporting regime, informed by four new Technical Panels, one for each environmental topic within the scope of GCG.
- 4.1.6 The GCG Framework is enshrined as part of the DCO, to ensure the airport operator takes account of the actual environmental effects of the airport's expansion as they manifest over time, rather than predicating all permitted growth up to 32 mppa on the basis of the effects predicted through the EIA process at the time of the application for development consent.

GLOSSARY AND ABBREVIATIONS

Term	Definition
ACA	Airport Carbon Accreditation
ACI	Airports Council International
ACL	Airport Co-ordination Limited
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
ATF	Airport Transport Forum
ATM	Air Transport Movement
BSI	British Standards Institution
CAA	Civil Aviation Authority
Carbon neutral	Carbon neutral is achieved when all residual CO ₂ emissions are balanced by carbon reduction offsets, in line with BSI PAS 2060.
CCC	Committee for Climate Change
CCD	Climb Cruise Descent
Climate resilience	Climate resilience is about ensuring the airport is adapted to, and can manage the impacts of, climate change while preventing those impacts from growing worse.
CO ₂ e	Carbon Dioxide equivalent
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EPNdB	Effective Perceived Noise in decibels
ES	Environmental Statement
ESG	Environmental Scrutiny Group. The ESG will be established through the DCO to independently oversee operation of the GCG framework. Its membership will include an independent chair, an independent aviation expert, representatives of local authorities and an airline industry body. The ESG will have a range of powers enshrined in its Terms of Reference, that can be utilised at its discretion.
GCG Framework	Green Controlled Growth Framework
GHG	Greenhouse Gas
GWP	Global Warming Potential
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
LACC	Luton Airport Co-ordination Committee
LOAEL	Lowest Observed Adverse Effect Level
LLACC	London Luton Airport Consultative Committee

Term	Definition
LAeq,T	Level of A-weighted, Equivalent Continuous Sound over Time
LBC	Luton Borough Council
Level 1 Threshold	A defined level of environmental effect, below the Limit and Level 2 Threshold levels, which triggers additional requirements for the airport operator, to avoid a future exceedance of a Limit.
Level 2 Plan	A report produced by the airport operator, which is triggered by an environmental effect being demonstrated to be in excess of a Level 2 Threshold, but below a Limit. It must contain details of how an exceedance of a Limit will be avoided, including what, if any, additional growth can be implemented, and any mitigation measures required to be delivered.
Level 2 Threshold	A defined level of environmental effect, below the Limit level, which triggers additional requirements for the airport operator, to avoid a future exceedance of a Limit.
Limit	A defined level of environmental effect that is not be exceeded.
LLAL	London Luton Airport Limited
LLAOL	London Luton Airport Operations Limited
LR	Luton Rising
LTN	London Luton Airport
LTO	Landing Take-Off
Monitoring Plan	Individual plans secured through the DCO for each of the four environmental topics of the GCG Framework, setting out the monitoring and reporting requirements associated with the relevant Limits of that topic.
Monitoring Report	A report (or reports) produced by the airport operator annually, to set out the monitoring results for each of the GCG Limits, with its content defined by the Monitoring Plans.
Mitigation Plan	A report produced by the airport operator, which is triggered by an environmental effect being demonstrated to be in excess of a Limit. It must set out the airport operator's plan for bringing the environmental effect(s) back below the Limit.
mppa	million passengers per annum
NAP	Noise Action Plan
NEDG	Noise Envelope Design Group
Net zero	Net Zero is achieved when all residual CO ₂ emissions are balanced by carbon removal offsets, in line with the UN Intergovernmental Panel on Climate Change (IPCC).
Noise envelope	A combination of measurable parameters used to monitor and control aircraft noise, which could include a combination of restrictions to inputs, noise exposure or noise impact.

Term	Definition
NSIP	Nationally Significant Infrastructure Project
PA2008	Planning Act 2008
PEIR	Preliminary Environmental Information Report
QC	Quota Count
SAS	Surface Access Strategy
Slot	A 'slot' is the permission given by an airport 'coordinator' for an aircraft to arrive or depart at a specific airport at a specified time on a specified day. This permission allows an aircraft, along with its crew and any passengers, access to the airport infrastructure, including runway, terminal facilities, baggage handling and operational requirements such as aircraft refuelling.
Slot co-ordination	Airport coordination is a means of managing airport capacity through the application of rules and regulations set out by IATA and reflected in UK legislation. Slot co-ordination involves the allocation of constrained or limited airport capacity to airlines and other aircraft operators to ensure a viable airport and air transport operation.
SOAEL	Significant Observed Adverse Effect Level
TA	Transport Assessment
Technical Panel	Technical Panels will be established through the DCO for each of the four environmental topics within the GCG Framework. They will be staffed by a combination of independent experts and representatives of local authorities, in order to review information submitted by the airport operator (Monitoring Reports, Level 2 Plans, Mitigation Plans) and providing comment and recommendations to the ESG.
UK ETS	United Kingdom Emissions Trading Scheme
UN SGDs	United Nations Sustainable Development Goals
WASG	Worldwide Airport Slot Guidelines
WWACG	Worldwide Airport Coordinators Group
$\mu\text{g}/\text{m}^3$	micrograms per cubic metre (of air)

APPENDIX A – AIR QUALITY MODELLING RESULTS

Table A.1: Airport contribution to pollutant concentrations (2026, NO₂, Phase 1)

ID	Name	Total Airport Contribution in DS (% of AQAL)	DS Concentration as % of AQAL	Impact Descriptor
1	A505	1%	78%	Out of Scope – Monitoring Only
2	Crawley Green Road 1	4%	45%	Out of Scope – Monitoring Only
3	Crawley Green Road 2	4%	42%	Out of Scope – Monitoring Only
4	Crawley Green Road 3	5%	37%	Out of Scope – Monitoring Only
5	Eaton Green Road 1 (LLA15)	9%	56%	Slight – In Scope
6	Eaton Green Road 2 (LN25)	11%	47%	Moderate – In Scope
7	Eaton Green Road 3	10%	41%	Slight – In Scope
8	Darley Road (L4)	6%	32%	Slight – In Scope
9	Winch Hill (L6)	7%	33%	Slight – In Scope
10	Dane Street (LLA11)	13%	38%	Moderate – In Scope
11	Somerles Castle	8%	37%	Slight – In Scope
12	New Airport Way	6%	51%	Slight – In Scope
13	Hitchin 1 (NH93)	1%	36%	Out of Scope – Monitoring Only
14	Hitchin 2 (NH2)	2%	51%	Out of Scope – Monitoring Only
15	M1	4%	73%	Out of Scope – Monitoring Only

Values rounded to 0 decimal places.
Results from the 'Faster Growth Case'.

Table A.2: Airport contribution to pollutant concentrations (2026, PM₁₀, Phase 1)

ID	Name	Total Airport Contribution in DS (%)	DS Concentration as % of AQAL	Impact Descriptor
1	A505	0%	39%	Out of Scope – Monitoring Only
2	Crawley Green Road 1	0%	38%	Out of Scope – Monitoring Only
3	Crawley Green Road 2	0%	37%	Out of Scope – Monitoring Only
4	Crawley Green Road 3	0%	35%	Out of Scope – Monitoring Only
5	Eaton Green Road 1 (LLA15)	0%	38%	Out of Scope – Monitoring Only
6	Eaton Green Road 2 (LN25)	0%	36%	Out of Scope – Monitoring Only
7	Eaton Green Road 3	0%	35%	Out of Scope – Monitoring Only
8	Darley Road (L4)	0%	33%	Out of Scope – Monitoring Only
9	Winch Hill (L6)	0%	32%	Out of Scope – Monitoring Only
10	Dane Street (LLA11)	0%	32%	Out of Scope – Monitoring Only
11	Somerles Castle	0%	33%	Out of Scope – Monitoring Only
12	New Airport Way	0%	38%	Out of Scope – Monitoring Only
13	Hitchin 1 (NH93)	0%	36%	Out of Scope – Monitoring Only
14	Hitchin 2 (NH2)	0%	36%	Out of Scope – Monitoring Only
15	M1	0%	41%	Out of Scope – Monitoring Only
Values rounded to 0 decimal places. Results from the 'Faster Growth Case'.				

Table A.3: Airport contribution to pollutant concentrations (2026, PM_{2.5}, Phase 1)

ID	Name	Total Airport Contribution in DS (%)	DS Concentration as % of AQAL	Impact Descriptor
1	A505	0%	53%	Out of Scope – Monitoring Only
2	Crawley Green Road 1	0%	51%	Out of Scope – Monitoring Only
3	Crawley Green Road 2	0%	51%	Out of Scope – Monitoring Only
4	Crawley Green Road 3	0%	48%	Out of Scope – Monitoring Only
5	Eaton Green Road 1 (LLA15)	<1%	51%	Out of Scope – Monitoring Only
6	Eaton Green Road 2 (LN25)	<1%	49%	Out of Scope – Monitoring Only
7	Eaton Green Road 3	0%	48%	Out of Scope – Monitoring Only
8	Darley Road (L4)	0%	45%	Out of Scope – Monitoring Only
9	Winch Hill (L6)	0%	44%	Out of Scope – Monitoring Only
10	Dane Street (LLA11)	0%	44%	Out of Scope – Monitoring Only
11	Someris Castle	0%	45%	Out of Scope – Monitoring Only
12	New Airport Way	<1%	52%	Out of Scope – Monitoring Only
13	Hitchin 1 (NH93)	0%	49%	Out of Scope – Monitoring Only
14	Hitchin 2 (NH2)	0%	49%	Out of Scope – Monitoring Only
15	M1	0%	55%	Out of Scope – Monitoring Only

Values rounded to 0 decimal places.
Results from the 'Faster Growth Case'.

Table A.4: Airport contribution to pollutant concentrations (2038, NO₂, Phase 2a)

ID	Name	Total Airport Contribution in DS (%)	DS Concentration as % of AQAL	Impact Descriptor
1	A505	<1%	61%	Out of Scope – Monitoring Only
2	Crawley Green Road 1	<1%	39%	Out of Scope – Monitoring Only
3	Crawley Green Road 2	<1%	38%	Out of Scope – Monitoring Only
4	Crawley Green Road 3	1%	36%	Out of Scope – Monitoring Only
5	Eaton Green Road 1 (LLA15)	3%	50%	Out of Scope – Monitoring Only
6	Eaton Green Road 2 (LN25)	2%	41%	Out of Scope – Monitoring Only
7	Eaton Green Road 3	3%	40%	Out of Scope – Monitoring Only
8	Darley Road (L4)	0%	33%	Out of Scope – Monitoring Only
9	Winch Hill (L6)	0%	34%	Out of Scope – Monitoring Only
10	Dane Street (LLA11)	0%	40%	Out of Scope – Monitoring Only
11	Somerles Castle	0%	38%	Out of Scope – Monitoring Only
12	New Airport Way	4%	45%	Out of Scope – Monitoring Only
13	Hitchin 1 (NH93)	<1%	34%	Out of Scope – Monitoring Only
14	Hitchin 2 (NH2)	1%	44%	Out of Scope – Monitoring Only
15	M1	2%	57%	Out of Scope – Monitoring Only

Values rounded to 0 decimal places.
Results from the 'Faster Growth Case'.

Table A.5: Airport contribution to pollutant concentrations (2038, PM₁₀, Phase 2a)

ID	Name	Total Airport Contribution in DS (%)	DS Concentration as % of AQAL	Impact Descriptor
1	A505	0%	40%	Out of Scope – Monitoring Only
2	Crawley Green Road 1	0%	38%	Out of Scope – Monitoring Only
3	Crawley Green Road 2	0%	37%	Out of Scope – Monitoring Only
4	Crawley Green Road 3	0%	35%	Out of Scope – Monitoring Only
5	Eaton Green Road 1 (LLA15)	0%	38%	Out of Scope – Monitoring Only
6	Eaton Green Road 2 (LN25)	0%	36%	Out of Scope – Monitoring Only
7	Eaton Green Road 3	0%	35%	Out of Scope – Monitoring Only
8	Darley Road (L4)	0%	33%	Out of Scope – Monitoring Only
9	Winch Hill (L6)	0%	32%	Out of Scope – Monitoring Only
10	Dane Street (LLA11)	0%	32%	Out of Scope – Monitoring Only
11	Somerles Castle	0%	33%	Out of Scope – Monitoring Only
12	New Airport Way	<1%	38%	Out of Scope – Monitoring Only
13	Hitchin 1 (NH93)	0%	37%	Out of Scope – Monitoring Only
14	Hitchin 2 (NH2)	0%	37%	Out of Scope – Monitoring Only
15	M1	0%	41%	Out of Scope – Monitoring Only

Values rounded to 0 decimal places.
Results from the 'Faster Growth Case'.

Table A.6: Airport contribution to pollutant concentrations (2038, PM_{2.5}, Phase 2a)

ID	Name	Total Airport Contribution in DS (%)	DS Concentration as % of AQAL	Impact Descriptor
1	A505	0%	91%	Out of Scope – Monitoring Only
2	Crawley Green Road 1	0%	85%	Out of Scope – Monitoring Only
3	Crawley Green Road 2	0%	85%	Out of Scope – Monitoring Only
4	Crawley Green Road 3	0%	80%	Out of Scope – Monitoring Only
5	Eaton Green Road 1 (LLA15)	<1%	85%	Out of Scope – Monitoring Only
6	Eaton Green Road 2 (LN25)	<1%	81%	Out of Scope – Monitoring Only
7	Eaton Green Road 3	<1%	80%	Out of Scope – Monitoring Only
8	Darley Road (L4)	0%	75%	Out of Scope – Monitoring Only
9	Winch Hill (L6)	0%	74%	Out of Scope – Monitoring Only
10	Dane Street (LLA11)	0%	74%	Out of Scope – Monitoring Only
11	Somerles Castle	0%	75%	Out of Scope – Monitoring Only
12	New Airport Way	<1%	87%	Out of Scope – Monitoring Only
13	Hitchin 1 (NH93)	0%	83%	Out of Scope – Monitoring Only
14	Hitchin 2 (NH2)	0%	83%	Out of Scope – Monitoring Only
15	M1	0%	92%	Out of Scope – Monitoring Only
Values rounded to 0 decimal places. Results from the 'Faster Growth Case'.				

Table A.7: Airport contribution to pollutant concentrations (2042, NO₂, Phase 2b)

ID	Name	Total Airport Contribution in DS (%)	DS Concentration as % of AQAL	Impact Descriptor
1	A505	0%	59%	Out of Scope – Monitoring Only
2	Crawley Green Road 1	0%	39%	Out of Scope – Monitoring Only
3	Crawley Green Road 2	0%	38%	Out of Scope – Monitoring Only
4	Crawley Green Road 3	0%	36%	Out of Scope – Monitoring Only
5	Eaton Green Road 1 (LLA15)	1%	50%	Out of Scope – Monitoring Only
6	Eaton Green Road 2 (LN25)	<1%	42%	Out of Scope – Monitoring Only
7	Eaton Green Road 3	0%	40%	Out of Scope – Monitoring Only
8	Darley Road (L4)	0%	35%	Out of Scope – Monitoring Only
9	Winch Hill (L6)	0%	37%	Out of Scope – Monitoring Only
10	Dane Street (LLA11)	0%	44%	Out of Scope – Monitoring Only
11	Somerles Castle	0%	40%	Out of Scope – Monitoring Only
12	New Airport Way	2%	43%	Out of Scope – Monitoring Only
13	Hitchin 1 (NH93)	0%	33%	Out of Scope – Monitoring Only
14	Hitchin 2 (NH2)	<1%	43%	Out of Scope – Monitoring Only
15	M1	<1%	55%	Out of Scope – Monitoring Only

Values rounded to 0 decimal places.
Results from the 'Faster Growth Case'.

Table A.8: Airport contribution to pollutant concentrations (2042, PM₁₀, Phase 2b)

ID	Name	Total Airport Contribution in DS (%)	DS Concentration as % of AQAL	Impact Descriptor
1	A505	0%	40%	Out of Scope – Monitoring Only
2	Crawley Green Road 1	0%	37%	Out of Scope – Monitoring Only
3	Crawley Green Road 2	0%	37%	Out of Scope – Monitoring Only
4	Crawley Green Road 3	0%	35%	Out of Scope – Monitoring Only
5	Eaton Green Road 1 (LLA15)	0%	38%	Out of Scope – Monitoring Only
6	Eaton Green Road 2 (LN25)	0%	35%	Out of Scope – Monitoring Only
7	Eaton Green Road 3	0%	35%	Out of Scope – Monitoring Only
8	Darley Road (L4)	0%	33%	Out of Scope – Monitoring Only
9	Winch Hill (L6)	0%	32%	Out of Scope – Monitoring Only
10	Dane Street (LLA11)	0%	32%	Out of Scope – Monitoring Only
11	Somerles Castle	0%	33%	Out of Scope – Monitoring Only
12	New Airport Way	0%	37%	Out of Scope – Monitoring Only
13	Hitchin 1 (NH93)	0%	37%	Out of Scope – Monitoring Only
14	Hitchin 2 (NH2)	0%	37%	Out of Scope – Monitoring Only
15	M1	0%	41%	Out of Scope – Monitoring Only

Values rounded to 0 decimal places.
Results from the 'Faster Growth Case'.

Table A.9: Airport contribution to pollutant concentrations (2042, PM_{2.5}, Phase 2b)

ID	Name	Total Airport Contribution in DS (%)	DS Concentration as % of AQAL	Impact Descriptor
1	A505	0%	109%	Out of Scope – Monitoring Only
2	Crawley Green Road 1	0%	102%	Out of Scope – Monitoring Only
3	Crawley Green Road 2	0%	102%	Out of Scope – Monitoring Only
4	Crawley Green Road 3	0%	96%	Out of Scope – Monitoring Only
5	Eaton Green Road 1 (LLA15)	1%	102%	Slight – In Scope
6	Eaton Green Road 2 (LN25)	1%	97%	Slight – In Scope
7	Eaton Green Road 3	1%	96%	Slight – In Scope
8	Darley Road (L4)	0%	90%	Out of Scope – Monitoring Only
9	Winch Hill (L6)	0%	89%	Out of Scope – Monitoring Only
10	Dane Street (LLA11)	<1%	89%	Out of Scope – Monitoring Only
11	Somerles Castle	<1%	90%	Out of Scope – Monitoring Only
12	New Airport Way	0%	103%	Out of Scope – Monitoring Only
13	Hitchin 1 (NH93)	0%	99%	Out of Scope – Monitoring Only
14	Hitchin 2 (NH2)	0%	99%	Out of Scope – Monitoring Only
15	M1	0%	110%	Out of Scope – Monitoring Only

Values rounded to 0 decimal places.
Results from the 'Faster Growth Case'.

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