Gatwick Airport Northern Runway Project

Environmental Statement
Chapter 6: Approach to Environmental Assessment

Book 5

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6 Approach to Environmental Assessment

6.1. Introduction

6.1.1 This chapter of the Environmental Statement (ES) sets out the approach taken to the Environmental Impact Assessment (EIA), to identify and evaluate the likely significant effects associated with the Project. This chapter also describes the overall approach followed in the assessment of the effects of the Project. Further details of topic specific methodologies, such as survey methods, are provided in the relevant **ES topic chapters** (chapters 7-19 (Doc Ref. 5.1)) and **ES Chapter 20: Cumulative Effects and Inter-relationships** (Doc Ref. 5.1).

6.2. Scope of the Assessment

6.2.1 Scoping is the process of identifying the issues to consider within the EIA process (establishing the scope of the assessment). Scoping is therefore an important preliminary procedure, which sets the context for the EIA process. Through scoping, the key environmental issues are identified at an early stage, which permits subsequent work to concentrate on those environmental topics for which significant effects may arise as a result of a proposed development.

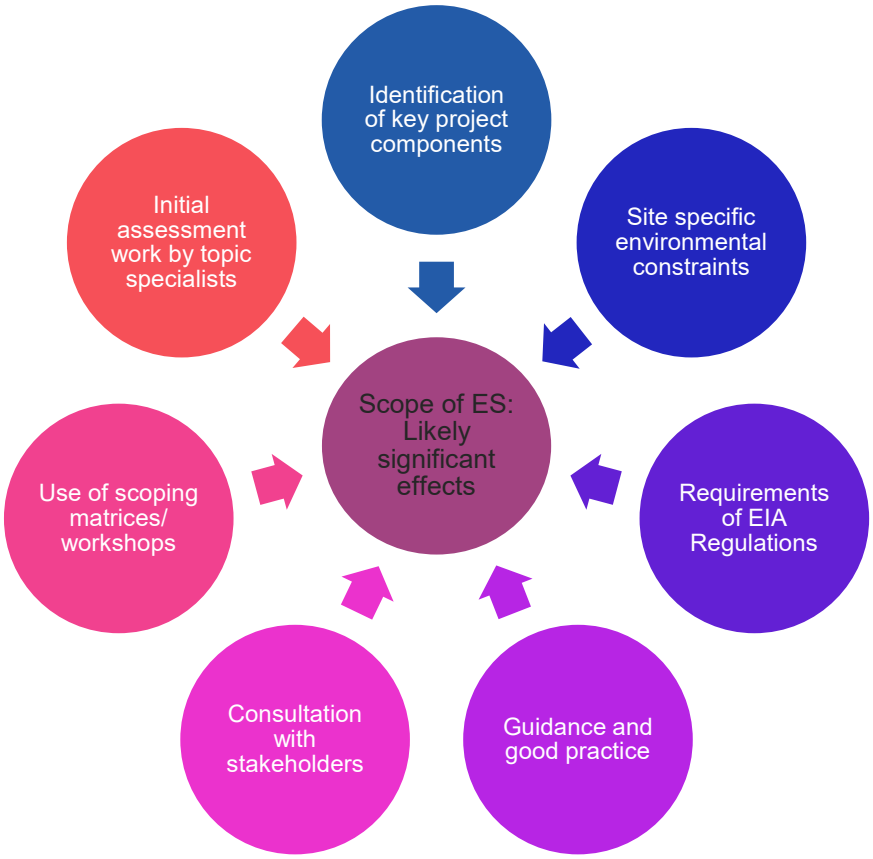
6.2.2 The scoping process is an iterative one, informed by increasing knowledge acquired through the EIA process. Diagram 6.2.1 highlights some of the key inputs to the scoping process. These inputs include the identification of an initial project description, identifying the key components of the Project and their likely maximum parameters. Taking this into account, alongside the characteristics of the environment in the vicinity of the Project site, the requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as the EIA Regulations) can be reviewed to provide an initial indication of the broad environmental topic areas likely to be relevant to the Project. From this point, the scope of assessment can be refined through the use of scoping workshops, consultation and the findings of initial assessments by topic specialists.

6.2.3 The EIA Regulations allow the applicant to request that the Planning Inspectorate (on behalf of the Secretary of State) sets out its opinion (known as a Scoping Opinion) as to the issues to be addressed in the EIA process. Whilst there is no formal requirement in the EIA Regulations to seek a Scoping Opinion prior to the submission of an application, it is recognised best practice to do so.

6.2.4 In September 2019, Gatwick Airport Limited (GAL) submitted a Scoping Report to the Planning Inspectorate, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects and, where necessary, to determine suitable mitigation measures for the construction and operational phases of the Project. It also described those topics or sub-topics which are proposed to be scoped out of the EIA process and provided justification as to why the Project would not have the potential to give rise to significant environmental effects in these

areas. The scoping information and relevant details are provided in **ES Appendix 6.2.1: Scoping Report** (Doc Ref. 5.1).

Diagram 6.2.1: Overview of Scoping Process



6.2.5 Following consultation with the relevant statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion on 11 October 2019 (**see ES Appendix 6.2.2 :Scoping Opinion** (Doc Ref. 5.3)).

6.2.6 Details of the key points raised in the Scoping Opinion and the way in which these have been addressed within the ES are provided in **ES Appendix 6.2.3: Scoping Responses and Location in ES** (Doc Ref. 5.3). Further details of topic-specific issues are set out within each of the topic chapters (see **ES topic chapters** 7 to 20 (Doc Ref. 5.1)).

6.2.7 Table 6.2.1 summarises the scope of the EIA process in the context of the requirements of Regulation 14(2) of the EIA Regulations. Further details of the requirements of the EIA process are set out within Schedule 4 of the EIA Regulations. **ES Appendix 6.2.4 Schedule 4 Requirements of the Infrastructure Planning Regulations - Location with ES** (Doc Ref. 5.3) provides details on Regulation 14(2) and Schedule 4 and sets out details of how each of these requirements have been addressed within the ES.

6.2.8 In addition to the key topics identified in Table 6.2.1, it is noted that microclimate and heat effects were identified within the Scoping Opinion as requiring inclusion within the assessment process. These matters have been addressed in **ES Chapter 15: Climate**

Change (Doc Ref. 5.1) (see also **ES Appendix 6.2.3: Scoping Responses and Location in ES** (Doc Ref. 5.3)).

Table 6.2.1: Summary of Environmental Statement Requirements (Regulation 14(2) of the EIA Regulations)

Required Information	Location within ES
a) a description of the proposed development comprising information on the site, design, size and other relevant features of the development	Chapter 5: Project Description (Doc Ref. 5.1)
b) a description of the likely significant effects of the proposed development on the environment	Chapter 7: Historic Environment Chapter 8: Landscape, Townscape and Visual Resources Chapter 9: Ecology and Nature Conservation Chapter 10: Geology and Ground Conditions Chapter 11: Water Environment Chapter 12: Traffic and Transport Chapter 13: Air Quality Chapter 14: Noise and Vibration Chapter 15: Climate Change Chapter 16: Greenhouse Gases Chapter 17: Socio-economic Effects Chapter 18: Health and Wellbeing Chapter 19: Agricultural Land Use and Recreation Chapter 20: Cumulative Effects and Inter-relationships (All Doc Ref. 5.1) Appendix 5.3.4: Major Accidents and Disasters (Doc Ref. 5.3)
c) a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment	
d) a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment	Chapter 3: Alternatives Considered (Doc Ref. 5.1)
e) a non-technical summary of the information referred to in sub-paragraphs (a) to (d)	Non-Technical Summary (Doc Ref. 5.4)
f) any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development	See Appendix 6.2.4: Schedule 4 Requirements of the Infrastructure Planning

Required Information	Location within ES
and to the environmental features likely to be significantly affected.	Regulations – Location with ES (Doc Ref. 5.3)

Topics Scoped out of the EIA Process

6.2.9 Effects on aspects of the environment, other than those listed in Table 6.2.1, are not likely to be significant. The topics scoped out of the assessment are set out below. The topic chapters identify the sub-topics that have been scoped out.

Material Assets

6.2.10 The EIA Regulations refer to 'material assets', including cultural heritage, architectural and archaeological aspects and landscape. The phrase 'material assets' has a broad scope, which may include an asset of human or natural origin, valued for heritage, landscape or socio-economic reasons. Material assets are in practice considered across a range of topic areas within the ES, in particular the historic environment, landscape and socio-economic chapters. These topics have been included within the EIA process. Therefore, no separate consideration of material assets is considered necessary. This approach was confirmed in the Scoping Opinion provided by the Planning Inspectorate (see **ES Appendix 6.2.2 :Scoping Opinion** (Doc Ref. 5.3)).

Radiation

6.2.11 Radiation is used within airports as part of the security screening process, including through the use of metal detectors, baggage screening and staff and passenger body screening. Each of these processes is well regulated in order to ensure that receptors are not exposed to any health or environmental risk. The Project would require internal reconfiguration of airport processes but would not introduce any new sources of radiation or include any sources of radiation other than those in use at airports throughout the UK.

6.2.12 Overall, the Project does not propose any new or unusual sources of radiation that could lead to significant effects on the environment. The Project would operate in line with normal good practice, regulatory and permitting requirements as is the case for all other UK airports. No radiation emissions are assumed to occur as a result of the construction process. Radiation emissions have therefore been scoped out of the EIA process. The Scoping Opinion provided by the Planning Inspectorate (see **ES Appendix 6.2.2 :Scoping Opinion** (Doc Ref. 5.3)) confirmed that a standalone assessment of radiation effects is not required.

Daylight and Sunlight

6.2.13 Due to the location of the proposed works and the nature of the surrounding infrastructure and land use, it is not considered likely that the Project would have significant effects in relation to daylight and sunlight. Effects on daylight and sunlight have been scoped out of the EIA process. This approach was confirmed in the Scoping Opinion provided by the Planning Inspectorate (see **ES Appendix 6.2.2 :Scoping Opinion** (Doc Ref. 5.3)).

Decommissioning Effects

6.2.14 The Project is proposed to form a long term part of Gatwick Airport, providing an integral part of the improved airport in order to allow an increase in flight and passenger numbers through making best use of Gatwick's existing runways. Although some elements of the Project would have a defined design life, it is proposed that all elements would be subject to continued maintenance/replacement in line with the management of the airport as a whole. Therefore, the Project, once operational, would form part of a permanent airport and no activities are proposed that would require decommissioning or associated decommissioning plans. As such, decommissioning effects for the airport itself have been scoped out of the EIA process. The removal of any temporary elements of the Project (such as construction compounds) has been assessed within this ES. This approach was confirmed in the Scoping Opinion provided by the Planning Inspectorate (see **ES Appendix 6.2.2 :Scoping Opinion** (Doc Ref. 5.3)).

Airspace Change Process

Future Airspace Strategy Implementation - South (FASI-S)

6.2.15 As set out in Chapter 4: Existing Site and Operation, work is being undertaken to review the airspace over London and the South East of England, with the aim of addressing existing constraints and allowing for future growth in air transport.

6.2.16 This work is being undertaken by NATS En Route plc (NERL), which is a subdivision within NATS, and a number of airports, including Gatwick, acting as airspace change sponsors and is known as Future Airspace Strategy Implementation - South (FASI-S).

6.2.17 FASI-S will be developed through an airspace change consultation in line with the CAA's airspace change process guidance document (CAP1616 (CAA, 2021)). This process for the airspace change around Gatwick Airport below 7,000 feet re-started in May 2021 and will take several years before the final design is clear. However, FASI-S is not required (nor is any other airspace change) to enable dual runway operations at Gatwick. The EIA process for this Project has therefore been undertaken based on current flightpath information, updated to reflect the movement of the centreline of Gatwick's northern runway by 12 metres.

6.2.18 Although the proposed FASI-S airspace changes lie outside of the scope of this Project, should information on the outcome of Gatwick's FASI-S project become available at a time when the information can be taken into account during the examination of the DCO application, the implications of this, in terms of the environmental effects such as those associated with noise and other emissions, will be reviewed and considered. Although the lateral tracks of the arrival and departure route structure around Gatwick will take some time to be determined through the airspace change process, improvements in the vertical design of routes can be expected to deliver both carbon and noise reduction benefits.

Dual Runway Operations

6.2.19 In order to request the minor amendments to Gatwick's AIP (Aeronautical Information Publication) required to enable dual runway operations at Gatwick (with the realignment to the centreline of the northern runway), GAL submitted a Statement of Need within the

scope of CAP 1616 (CAA, 2021) to the CAA on 11 November 2019. The CAA issued CAP 1908 in May 2020, assigning the airspace change as Level 0[1] as the proposal would not alter traffic patterns (CAA, 2020). In December 2020, the CAA issued its decision (Decide Gateway): '*The CAA has completed the Decide Gateway Assessment and is satisfied that the change sponsor has met the requirements of the Airspace Change Process. The CAA approves the implementation of this airspace change proposal.*' CAP 1908 notes that all physical works associated with the Northern Runway Project would be considered through the Development Consent Order (DCO) consenting process. So provided that DCO consent is achieved the necessary airspace change is in place to allow a dual runway operation.

Transboundary Effects

6.2.20 The EIA Regulations require consideration of transboundary effects of development on the environment. Transboundary effects are the effects of a project on the environment of another European Economic Area (EEA) member state. The need to consider such transboundary effects has been embodied by the United Nations Economic Commission for Europe on EIA in a Transboundary Context (commonly referred to as the 'Espoo Convention'). The Convention requires that assessments are extended across borders between parties of the Convention when a planned activity may cause significant adverse transboundary impacts.

6.2.21 Paragraph 3 of Schedule 3 to the EIA Regulations requires that '*the likely significant effects of the development on the environment must be considered… taking into account - … (c) the transboundary nature of the impact'.* Further, at Paragraph 5 of Schedule 4, the EIA Regulations state that the ES must include *'The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary… effects of the development'*. Regulation 32 also obligates the Planning Inspectorate to form a view on the potential for transboundary impact and consult with relevant EEA states.

6.2.22 The Planning Inspectorate Advice Note Twelve: Transboundary Impacts and Process (Planning Inspectorate, 2020c) outlines the legal context and the process for undertaking a transboundary assessment. The advice note states that the Inspectorate should determine whether or not the development is likely to have significant effects on the environment within another EEA State. The Scoping Opinion (paragraph 3.3.29) recommended that the ES identifies whether the proposed development has the potential for significant transboundary impacts and if so what these impacts are and which EEA States would be affected. A transboundary screening exercise has been undertaken to aid the Inspectorate and details are provided in **ES Appendix 6.2.5: Transboundary Screening Matrix** (Doc Ref. 5.3).

6.2.23 Two environmental aspects for which there could conceivably be a transboundary effect were identified during the scoping stages. These were effects on migratory bird species and effects on climate change. The screening exercise following the completion of the ES

[1] Level 0: Changes to nomenclature or qualifying remarks of notified airspace design that will not later air traffic patterns. Change sponsors are required only to complete Stage 1A of the airspace change process.

has identified no significant transboundary effects and therefore it is concluded that significant transboundary effects can be ruled out. The conclusions are summarised below.

6.2.24 The assessment in **ES Chapter 9: Ecology and Nature Conservation** (Doc Ref. 5.1) and **ES Appendix 9.9.1 Habitat Regulations Assessment Report** (Doc Ref. 5.3) considered the potential for air quality effects on European designated sites (and any migratory species they support). No significant transboundary effects were identified on the European designated sites (and on any migratory species they support). Effects on climate change have been considered within **ES Chapter 15: Climate Change** (Doc Ref. 5.1) and **ES Chapter 16: Greenhouse Gasses** (Doc Ref. 5.1) and in accordance with the process adopted for other proposed development at UK airports. Due to the global nature of climate change and as specific greenhouse gas emissions cannot be apportioned to EEA states, it is unlikely that there is any potential for specific greenhouse gas emissions impacts on individual EEA states.

6.2.25 Under Regulation 32 of the EIA Regulations and on the basis of the current assessment undertaken as part of the ES, no significant effects on the environment in any EEA States have been identified.

6.3. Environmental Assessment Methodology

Relevant EIA Guidance

6.3.1 The following government or institute guidance has been taken into account during the EIA process:

- National Planning Practice Guidance (Ministry of Housing, Communities and Local Government, 2019);
- Mitigation Measures in Environmental Statements (Department of the Environment, Transport and of the Regions, 1997);
- Design Manual for Roads and Bridges: Sustainability and Environmental Appraisal. LA 104: Environmental assessment and monitoring (Highways England *et al*., 2020);
- Guidelines for Environmental Impact Assessment (Institute of Environmental Management and Assessment (IEMA), 2004);
- Environmental Impact Assessment Guide to: Shaping Quality Development (IEMA, 2015);
- Climate Change Resilience and Adaption (IEMA, 2020);
- Environmental Impact Assessment Guide to: Delivering Quality Development (IEMA, 2016);
- Assessing Greenhouse Gas Emissions and Evaluating their Significance, Second Edition, (IEMA, 2022);
- Health in Environmental Impact Assessment: A Primer for a Proportional Approach (IEMA, 2017);
- Planning Act 2008: Guidance on the pre-application process for major infrastructure projects (Ministry of Housing, Community and Local Government, 2015);
- Advice Note Three: EIA Consultation and Notification (Planning Inspectorate, 2017);
- Advice Note Six: Preparation and Submission of Application Documents (Planning Inspectorate, 2020a);

- Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping (Planning Inspectorate, 2020b);
- Advice Note Nine: Using the Rochdale Envelope (Planning Inspectorate, 2018);
- Advice Note Twelve: Transboundary Impacts and Process (Planning Inspectorate, 2020c); and
- Advice Note Seventeen: Cumulative Effects Assessment (Planning Inspectorate, 2019).

6.3.2 Other topic-specific specialist methodologies and good practice guidelines have been drawn on as necessary and are set out in each topic chapter (chapters 7 to 20).

Methodology and Assessment Criteria

6.3.3 Each topic chapter provides details of the methodology for baseline data collection and the approach to the assessment of effects. Each environmental topic has been considered by a specialist in that area.

6.3.4 Each topic chapter defines the scope of the assessment within the methodology section, together with details of the study area, desk study and survey work undertaken. Each chapter outlines relevant consultation undertaken and how it has been addressed. The identification and evaluation of effects have been based on the information set out in **ES Chapter 5: Project Description** (Doc Ref. 5.1), EIA good practice guidance and relevant topic-specific guidance where available.

Baseline Conditions

Existing Baseline Conditions

6.3.5 The existing and likely future environmental conditions in the absence of the Project are known as ‘baseline conditions’. Each topic-based chapter includes a description of the existing (baseline) environmental conditions. The baseline conditions at the Project site and within the study area form the basis of the assessment, enabling the likely significant effects to be identified through a comparison with the baseline conditions.

Future Baseline Conditions

6.3.6 As set out in Chapter 4: Existing Site and Operation, a number of improvements are proposed at Gatwick to accommodate the predicted increase in passenger numbers in the absence of the Project. The likely timing of these improvements has been taken into account through the use of future baseline scenarios and assessment years (see 6.3.11 below).

6.3.7 The consideration of future baseline conditions has also taken into account the likely effects of climate change, as far as these are known at the time of writing. This has been based on information available from the UK Climate Projections project, developed by the Met Office and Environment Agency (Met Office, 2018), which provides information on plausible changes in climate for the UK and on published documents such as the UK Climate Change Risk Assessment 2022 (HM Government, 2022).

6.3.8 Topic authors have also considered other factors relevant to identification of future baseline conditions, such as trends in population size of protected species or changes in socio-economic conditions over time.

Consultation and engagement

6.3.9 As described in Chapter 1: Introduction, two rounds of consultation have been undertaken. The first was during Autumn 2021 and the second during Summer 2022. Each topic chapter summarises the relevant comments received and identifies how they have been addressed in the ES. Also, relevant statutory and non-statutory consultees have been consulted throughout the EIA process, such as via Topic Working Groups. This consultation and engagement is also described in the topic chapters. A more detailed description of the consultation responses and how they have been addressed is provided in the separate **Consultation Report** (Doc Ref. 6.1) submitted with the application.

Assessment of Effects

6.3.10 The EIA Regulations require the identification of the likely significant environmental effects of the Project. The overarching approach taken within this assessment is set out below.

Assessment Years

6.3.11 The approach to assessment has incorporated the use of identified assessment periods to allow for evaluation of the likely effects during the construction process (the indicative construction programme is described in Section 5.3, **ES Chapter 5: Project Description** (Doc Ref. 5.1)) and during the operation of the Project. The following assessment periods (also referred to in this ES as assessment years) have been used to inform this ES:

- 2024 to 2029, representing the assumed initial construction period prior to opening of the altered northern runway;
- 2029: represents the assumed opening year of the altered northern runway (and therefore the first point at which effects arising from its dual runway operation would occur);
- 2032: an interim assessment year (and assumed surface access improvements opening year);
- 2038: representing the assumed year in which the development works proposed as part of the Project would be completed; and
- 2047: representing the long term forecast year and to meet a specific requirement of guidance in the Design Manual for Roads and Bridges to assess impacts 15 years after the last of the key highways works associated with the Project are due to be completed.

6.3.12 For the purposes of this ES, assessment concentrates on the period 2024 to 2047, with modelling topics modelling 2029, 2032, 2038 and 2047 as the primary assessment years.

6.3.13 For some of the assessment years (including the airfield opening year (2029) and the interim assessment year (2032)), construction activities would occur alongside operation of the altered northern runway and this has been taken into account in the assessments. In some cases, individual topic chapters may also identify additional years to be included in the assessment work, in accordance with topic-specific good practice guidance.

6.3.14 As set out in **ES Chapter 5: Project Description** (Doc Ref. 5.1), this ES considers an increase in airport throughput to approximately 386,000 commercial ATMs per year and corresponding passenger throughput of approximately 80.2 mppa by 2047 .

Assessing the Likely Effects of the Project

6.3.15 Each topic chapter clearly defines its approach to the evaluation of significance and the methodology used for the EIA process.

6.3.16 This section provides details of the overarching methodology for the EIA process. This has been used to inform the approach to assessment for each environmental topic, except where topic-specific guidance or usual practice for that topic indicates otherwise. The overarching approach takes into account both the sensitivity of receptors affected and the magnitude of the likely impact in determining the significance of the effect.

Sensitivity or Importance of Receptors

6.3.17 Receptors are defined as the physical or biological resource or user group that would be affected by a project. For each topic, baseline studies have informed the identification of potential environmental receptors. Some receptors will be more sensitive to certain environmental effects than others. The sensitivity or value of a receptor may depend, for example, on its frequency, extent of occurrence or conservation status at an international, national, regional or local level.

6.3.18 Sensitivity has been defined within each of the topic chapters of the ES, where appropriate, and takes into account the factors including:

- vulnerability of the receptor;
- recoverability of the receptor; and
- value/importance of the receptor.

6.3.19 Sensitivity has generally been described using the following scale:

- high;
- medium;
- low; and
- negligible.

6.3.20 In some cases, a further category of 'very high' has been used.

6.3.21 As a general rule, the receptor sensitivity levels have been defined as set out in Table 6.3.1.

Table 6.3.1: Definitions of Receptor Sensitivity (based on Highways England *et al.*, (2020))

Sensitivity	Typical Descriptors
Very High	Very high importance and rarity, international scale and very limited potential for substitution.
High	High importance and rarity, national scale and limited potential for substitution.
Medium	High or medium importance and rarity, regional scale, limited potential for substitution.

Sensitivity	Typical Descriptors
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

Magnitude of Impact

6.3.22 Impacts are identified as the physical changes to the environment attributable to the Project. For each topic, the likely environmental impacts have been identified. The magnitude of the impact has been described using the criteria defined within each topic chapter.

6.3.23 The categorisation of the impact magnitude has taken into account the following four factors:

- extent;
- duration;
- frequency; and
- reversibility.

6.3.24 Impacts have been defined as either adverse or beneficial. They may also be described as listed below.

- Direct: arise from activities associated with the Project. These tend to be either spatially or temporally concurrent.
- Indirect: impacts on the environment which are not a direct result of the Project, often produced away from the Project site or as a result of a complex pathway.

6.3.25 Impacts have been divided into those occurring during the construction period and those occurring during operation. As set out above, interim assessment years have been considered, where construction and operational activities may overlap. Where appropriate, chapters have referred to temporary and permanent impacts (where temporary impacts are those that last for a limited period of time).

6.3.26 The impacts related to land take have been assessed as part of the construction process within the year that the impact would occur. These impacts could be considered either temporary or permanent depending on whether the land would be restored following completion of the construction period.

6.3.27 With respect to the duration of temporary impacts, the following has been used as a guide within this assessment, unless defined separately within the topic chapters:

- Short term: a period of months, up to one year;
- Medium term: a period of more than one year, up to five years; and
- Long term: a period of greater than five years.

6.3.28 Magnitude has generally been described using the following scale:

- high;
- medium;
- low; and

- negligible.

6.3.29 In some cases, a further category of 'no change' has been used.

6.3.30 As a general rule, magnitude levels have been defined as set out in Table 6.3.2.

Table 6.3.2: Definitions of Impact Magnitude (based on Highways England *et al.*, 2020)

Magnitude	Typical Descriptors
High	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features and elements (Adverse).
	Large scale or a major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality (Beneficial).
Medium	Loss of resource but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements (Adverse).
	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality (Beneficial).
Low	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements (Adverse).
	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring (Beneficial).
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements (Adverse).
	Very minor benefit to or positive addition of one or more characteristics, features or elements (Beneficial).
No change	No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Significance of Effects

6.3.31 Effect is the term used to express the consequence of an impact (expressed as the 'significance of effect'), which is determined by considering both the magnitude of the impact and the sensitivity of the receptor affected.

6.3.32 The magnitude of an impact does not generally directly translate into significance of effect. For example, a significant effect may arise as a result of a relatively modest impact on a resource of national value, or a large impact on a resource of local value. In broad terms, therefore, the significance of the effect can depend on both the impact magnitude and the sensitivity or importance of the receptor.

6.3.33 Significance levels are defined separately for each topic, taking into account relevant topic-specific guidance, based on the scale set out below;

- substantial;
- major;
- moderate;

- minor; or
- negligible.

6.3.34 Table 6.3.3 sets out the general approach used to inform the assessment of significance based on the sensitivity of the receptor and the magnitude of impact. This matrix has informed the topic-specific methodologies. For some topics, a simplified approach is considered appropriate or the approach may be informed by topic-specific guidance.

Table 6.3.3: Assessment Matrix

Sensitivity	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Negligible	No change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	No change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No change	Minor	Minor or Moderate	Moderate or Major	Major or Substantial
Very high	No change	Minor	Moderate or Major	Major or Substantial	Substantial

6.3.35 Where a range of significance levels are presented, the final assessment for each effect is based upon expert judgement.

6.3.36 In all cases, the evaluation of receptor sensitivity or value, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by narrative to explain the conclusions reached.

6.3.37 Unless set out otherwise in each topic chapter, effects assessed as moderate or above are considered to be significant within the assessment.

Addressing Uncertainty or Difficulties in Assessment

6.3.38 There is some degree of inherent uncertainty within the EIA process, in relation to factors such as future improvements to construction and design, the potential effects of climate change on existing receptors and in terms of the margin of error within forecasting or modelling tools. The text below sets out the approach to addressing uncertainty. In all cases, where uncertainty exists, or where difficulties have been encountered, this has been identified within the relevant chapter of the ES, together with details of the measures that have been taken to reduce uncertainty as far as reasonably practicable.

6.3.39 The EIA process has been undertaken based on the description set out in **ES Chapter 5: Project Description** (Doc Ref. 5.1). The existing airport provides a number of constraints that have informed the Project design, including constraints with regard to location, available space and phasing, given the need to ensure continued use of the airport during construction of the Project. In addition, GAL's experience in operating Gatwick has ensured that the design of many components of the Project is well understood. This has limited the number of options that have been carried forward through the EIA process. However,

flexibility is needed with regard to the detailed design of some elements of the Project, particularly for those elements that would be constructed later in the construction programme or that would be operated by third parties (such as hotels).

6.3.40 Where flexibility is required, guidance produced by the Planning Inspectorate with regard to the use of the 'Rochdale envelope' approach (Planning Inspectorate, 2018) has informed the assessment. This includes the 'worst case' option from the realistic and likely options that may be developed. Where the assessment shows that no significant effect is assumed for the worst case option, it is considered that other (lesser) options would also have no significant effect.

6.3.41 Any assumptions made regarding the maximum design scenarios have been identified in each of the topic chapters and have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group.

Future Baseline and Assessment Periods

6.3.42 The approach to assessment of future baseline conditions and the use of assessment periods is set out under the 'Baseline Conditions' section above. The assessment has taken into account future baseline conditions at the airport (including growth in throughput and consented/committed developments that would occur in the absence of the Project), as set out in section 4.4 of **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1).

6.3.43 There will always be some element of uncertainty regarding future trends in environmental conditions and climate. The assessments made have been based on the most up to date information available at the time of assessment, including information available from the UK Climate Projections project and on published documents such as the UK Climate Change Risk Assessment 2022 (HM Government, 2022). This information has been reviewed by climate change technical specialists in order to inform **ES Chapter 15: Climate Change** (Doc Ref. 5.1) and **ES Chapter 16: Greenhouse Gases** (Doc Ref. 5.1).

Forecasting and Modelling

6.3.44 Whilst there is inherent uncertainty in predicting long term aviation growth, the forecasts presented have been prepared jointly by GAL's in-house airline relations and marketing and research teams and ICF, one of the UK's foremost experts in air traffic forecasting.

6.3.45 As set out in **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1), the COVID-19 pandemic had a very severe impact on the global aviation industry in 2020. Gatwick, along with all other UK airports, experienced a significant reduction in passenger traffic levels as a result of both Government-imposed restrictions on air travel and reduced passenger demand driven by low consumer confidence. There is confidence that passenger and airline demand at Gatwick will return to previous levels over the course of the next few years and then continue to grow thereafter. Through 2022 airlines continued to re-establish their schedules and Gatwick returned to 85% of its passenger throughput in the peak summer months. This is notwithstanding the fact that some headwinds remain reflecting the weakening macro-economic environment alongside the ongoing conflict in Ukraine, as well as some markets in Asia continuing to be impacted by ongoing travel restrictions.

6.3.46 In preparing the forecasts, regard has been had to the importance of having a realistic view of the level and characteristics of air traffic growth that would occur at Gatwick, whilst also ensuring that the environmental impacts of Gatwick's growth, some of which, such as noise, traffic and carbon, rely heavily on the forecasts, are not understated. This also accords with advice from the Planning Inspectorate to ensure that realistic 'worst case' environmental impacts are understood. For this reason, the forecasts presented are considered to represent a robust and realistic view of the level of traffic growth.

6.3.47 Where modelling tools have been used within the topic assessments, care has been taken to ensure that the tool selected is appropriate for the assessment, taking into account topic-specific good practice and guidance. Calibration has been used to ensure a reasonable degree of accuracy in measurements. Topic chapters within the ES set out measures taken to address any uncertainty with regard to modelling inputs and outputs and any assumptions made.

Sensitivity Tests

6.3.48 Forecasted air traffic data has been used in the ES for the baseline case (in the absence of the Project) and for the Project. In addition to these core forecasts, two further sets of forecasts have been prepared to enable sensitivity assessments of environmental and economic impacts. These are the 'Slow Fleet Transition' sensitivity case and 'Slower Growth' sensitivity case.

6.3.49 In the 'Slow Fleet Transition' sensitivity case the rate of transition of Gatwick's airline fleet to newer generation aircraft is assumed to be slower than in the core forecasts. This sensitivity case has the same number of passenger and aircraft movements as in the core forecasts. This sensitivity test forecast is used to assess the potential for higher aircraft noise and other emissions.

6.3.50 The 'Slower Growth' sensitivity case provides scenarios where the rate of growth at Gatwick is slower than in core forecasts. This means there are less passengers and aircraft movements. This sensitivity test is used to assess the economic implications if growth at Gatwick were to be slower than forecast in the core forecasts.

6.3.51 These sensitivity tests have been considered separately within the topic chapters of the ES where relevant. It is therefore considered that the combination of the core assessment and the different scenarios considered in the sensitivity testing mean that the Project has been assessed against a range of worst case scenarios.

Mitigation, Monitoring and Enhancement Measures

6.3.52 The EIA Regulations (Regulation 14(2)(c)) require that where significant effects are identified '*a description of any feature of the Project, or measures envisaged in order to avoid, prevent or reduce or, if possible, offset any likely significant adverse effects on the environment*' should be provided.

6.3.53 The development of mitigation measures is part of the iterative EIA process. Measures have been under consideration throughout the EIA process in response to the findings of initial assessments, consultation and ongoing engagement with key stakeholders such as via Topic Working Groups. The Project includes a range of measures designed to reduce

or prevent significant adverse environmental effects arising, where practicable. In some cases, these measures may result in enhancement of environmental conditions. The assessment of effects within this ES takes into account all measures that form part of the Project and to which GAL is committed.

6.3.54 The topic chapters included in this ES consider the following mitigation types:

- Embedded mitigation (also referred to as primary mitigation (such as in guidance from the IEMA, 2016). This also incorporates tertiary mitigation measures that are required as a result of legislative requirements or standard good practice. Although many of these measures are regulated separately, these are included within the CoCP (see **ES Appendix 5.3.2: Code of Construction Practice** (Doc Ref. 5.3)) and other relevant environmental management plans for completeness. These embedded mitigation measures have been incorporated into the design of, or are otherwise integral to, the Project.
- Further mitigation (also referred to as secondary mitigation such as in guidance from the IEMA, 2016) comprising actions that will require further activity to achieve the assumed outcome and would further prevent/offset effects.

6.3.55 The assessment has been undertaken by taking into account embedded (primary and tertiary) mitigation. Following this assessment, where required, further mitigation measures are identified in individual topic chapters. These are measures that could further prevent and, where possible, offset any adverse effects on the environment, particularly where significant adverse effects are identified in the assessment that already takes into account embedded and tertiary mitigation. These might include measures in the CoCP in addition to the tertiary measures. Where this is the case, the residual effects with further mitigation measures in place are identified in the topic chapters.

6.3.56 Where appropriate, monitoring measures have been set out within each topic chapter of the ES.

6.3.57 Both embedded mitigation and where applicable, further mitigation measures are identified in the topic chapters. The separate Mitigation Route Map (see **ES Appendix 5.2.3: Mitigation Route Map** (Doc Ref. 5.3)) presents a compilation of the mitigation measures identified within the ES and the way in which each have been committed to by GAL as part of the DCO Application for the Project.

Cumulative and Inter-related Effects

6.3.58 Cumulative effects with other proposed developments have been assessed as part of the EIA process and are reported in **ES Chapter 20: Cumulative Effects and Inter-relationships** (Doc Ref. 5.1). This includes consideration of whether the Project, when considered together with other proposed developments, may result in any greater effects on a receptor than the effects of the Project alone. Details of the other developments considered for the cumulative effects assessment are set out at **ES Appendix 20.4.1: Cumulative Effects Assessment Long and Short List** (Doc Ref. 5.3).

6.3.59 In addition to the main cumulative effects assessment provided in **ES Chapter 20: Cumulative Effects and Inter-relationships** (Doc Ref. 5.3), the potential for cumulative effects with a proposed expansion of Heathrow Airport through the provision of a third

runway has also been considered. Given the continuing uncertainty surrounding when, or indeed if, a third runway will now be developed at Heathrow, it is considered that the most robust assumption to adopt is to assume that a third runway does not come forward at Heathrow. However, without prejudice to this position, and recognising that Heathrow R3 remains government policy, it is considered as a separate sensitivity test for potential cumulative effects with the Project. This has been undertaken in the event this were to come forward around the later assessment periods for the Project. Therefore, the assessment years of 2038 and 2047 have been used and a high level, qualitative assessment has been undertaken. It is considered that in circumstances where Heathrow R3 becomes operational in the early/mid 2030s, air traffic levels at Gatwick would likely decline in the period immediately following the opening of Heathrow R3 by comparison to the scenario where Heathrow R3 was not operational. In the longer-term, even with Heathrow R3, it is forecast that Gatwick's traffic would subsequently return to the levels forecast without Heathrow R3. This is explained further in section 4 of **ES Appendix 4.3.1: Forecast Data Book** (Doc Ref. 5.3). However, **ES Chapter 20: Cumulative Effects and Inter-relationships** (Doc Ref. 5.1) provides a separate qualitative assessment that considers the potential cumulative effects in the event Heathrow third runway was to come forward as a sensitivity test to the main cumulative assessment.

6.3.60 A DCO application was submitted in March 2023 for the proposed expansion of London Luton Airport. This has been considered as part of the long list of other developments and has been screened out for inclusion in the cumulative effects assessment (see **ES Appendix 20.4.1: Cumulative Effects Assessment Long and Short List** (Doc Ref. 5.3)).

6.3.61 In addition, inter-relationships between topic areas have been considered, in order to ensure that effects on a receptor arising from more than one environmental topic area are considered. These effects are also reported in **ES Chapter 20: Cumulative Effects and Inter-relationships** (Doc Ref. 5.1).

6.4. References

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Planning Inspectorate (2019) Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects.

Planning Inspectorate (2020a) Advice Note Six: Preparation and submission of application documents.

Planning Inspectorate (2020b) Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping.

Planning Inspectorate (2020c) Advice Note Twelve: Transboundary Impacts and Process.

The Infrastructure Planning (Environmental Impact Assessment) Regulations, 2017. 2017 No. 572.

6.5. Glossary

Table 6.5.1: Glossary of Terms

Term	Description
AIP	Aeronautical Information Publication
CoCP	Code of Construction Practice
EEA	European Economic Area
EIA	Environmental Impact Assessment
ES	Environmental Statement
FASI-S	Future Airspace Strategy Implementation - South
GAL	Gatwick Airport Limited

Term	Description
IEMA	Institute of Environmental Management and Assessment
NERL	NATS En Route plc