

An aerial photograph of Gatwick Airport's northern runway and taxiway. The runway is a long, straight concrete strip with white markings, flanked by green grass. Several aircraft are visible on the taxiway, including a large white jet with four engines in the foreground and several smaller jets. The background shows airport buildings and surrounding greenery.

YOUR LONDON AIRPORT
Gatwick

*Our northern runway:
making best use of Gatwick*

**Preliminary Environmental Information Report
Chapter 18: Agricultural Land Use and Recreation**

September 2021

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18 Agricultural Land Use and Recreation

18.1. Introduction

18.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the findings of the Environmental Impact Assessment (EIA) work undertaken to date concerning the potential effects of the proposal to make best use of Gatwick's existing runways (referred to within this report as 'the Project') on agricultural land use and recreation.

18.1.2 Specifically, this chapter considers the potential effects of the Project on agricultural land use and recreational resources, including areas of public open space, public rights of way and other linear recreational routes during its construction and operational phases.

18.1.3 Those effects of the Project that may affect the visual and acoustic amenity of recreational resources are assessed in Chapter 8: Landscape, Townscape and Visual Resources and Chapter 14: Noise and Vibration, where appropriate. Socio-economic effects are considered within Chapter 16: Socio-economics.

18.1.4 In particular, this PEIR chapter:

- sets out the existing and future environmental baseline conditions, established from desk studies, surveys and consultation to date;
- presents the potential environmental effects on agricultural land use and recreation arising from the Project, based on the information gathered and the analysis and assessments undertaken to date;
- identifies any assumptions and limitations encountered in compiling the environmental information; and
- highlights any necessary monitoring and/or mitigation measures that could prevent, minimise, reduce or offset the possible environmental effects identified during the EIA process.

18.1.5 This chapter is accompanied by Figures 18.6.1 to 18.6.5. It also summarises information contained within technical reports, which are included at Appendix 18.2.1: Summary of Local Planning Policy; Appendix 18.3.1: Summary of Stakeholder Scoping Responses; Appendix 18.6.1: Published Agricultural Land Classification Data; Appendix 18.6.2: Soil Survey Results; and Appendix 18.6.3: Recreational User Survey.

18.1.6 The PEIR will inform pre-application consultation. Following consultation, comments on the PEIR will be reviewed and taken into account, where appropriate, in preparation of the Environmental Statement (ES) that will accompany the application to the Planning Inspectorate for development consent.

18.2. Legislation and Policy

18.2.1 This section of the chapter reviews planning policy and other documentation that is relevant to the assessment of agricultural land use and recreation effects of the Project. There is no legislation relating to this topic that is relevant to this Project.

Planning Policy Context

National Policy Statements

- 18.2.2 The Airports National Policy Statement (NPS) (Department for Transport, 2018), although primarily provided in relation to a new runway at Heathrow Airport, remains a relevant consideration for other applications for airport infrastructure in London and the south east of England.
- 18.2.3 The NPS for National Networks (Department for Transport, 2015) sets out the need for development of road, rail and strategic rail freight interchange projects on the national networks and the policy against which decisions on major road and rail projects will be made¹. This has been taken into account in relation to the highways improvements proposed as part of the Project.
- 18.2.4 Table 18.2.1 provides a summary of the relevant requirements of these NPSs and how these are addressed within the PEIR.

Table 18.2.1: Summary of NPS Information Relevant to this Chapter

Summary of NPS requirement	How and where considered in the PEIR
Airports NPS	
The applicant should take into account the economic and other benefits of best and most versatile agricultural land, seeking to use areas of poorer quality land in preference to those of a higher quality. The applicant should also seek to minimise impacts on soil quality (paragraph 5.115).	The mitigation/enhancement measures adopted as part of the Project are described in Section 18.8 of this chapter and the potential impacts are considered in Section 18.9.
Existing open space, sports and recreational buildings and land should not be developed unless the land is no longer needed or the loss would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location (paragraph 5.112)	
The applicant can minimise the direct effects on the existing use of the proposed site, or proposed uses near the site, by, <i>inter alia</i> , the protection of soils during construction (paragraph 5.118).	
Where green infrastructure is affected, the applicant should aim to ensure the functionality and connectivity of the green infrastructure network is maintained and any necessary works are undertaken, where possible, to mitigate any adverse impact and, where appropriate, to improve that network and other areas of open space, including appropriate access to National Trails and other public rights of way (paragraph 5.119).	
The applicant is expected to take appropriate mitigation measures to address adverse effects on National Trails, other public rights of way and open access land and, where	

¹ It is noted that the Transport Decarbonisation Plan published by Department for Transport (DfT) on 14 July 2021 announced DfT's intention to review the NPS for National Networks in due course once demand patterns post-pandemic become clearer. It is understood DfT intends to commence the review by the end of 2021 and complete it by Spring 2023. In the interim and whilst the review is undertaken, DfT has confirmed the NPS for National Networks remains relevant government policy and has full force and effect for the purposes of the Planning Act 2008.

Summary of NPS requirement	How and where considered in the PEIR
<p>appropriate, to consider what opportunities there may be to improve access. In considering revisions to an existing right of way, consideration needs to be given to the use, character, attractiveness and convenience of the right of way (paragraph 5.123).</p>	
<p>NPS for National Networks</p>	
<p>Existing open space, sports and recreational buildings and land should not be developed unless the land is surplus to requirements or the loss would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location. Applicants considering proposals which would involve developing such land should have regard to any local authority’s assessment of need for such types of land and buildings (paragraph 5.166).</p>	<p>The mitigation/ enhancement measures adopted as part of the Project are described in Section 18.8 of this chapter and the potential impacts are considered in Section 18.9.</p>
<p>Applicants should take into account the economic and other benefits of the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and seek to use areas of poorer quality land in preference to that of a higher quality. Applicants should also identify any effects, and seek to minimise impacts, on soil quality taking into account any mitigation measures proposed (paragraph 5.168).</p>	
<p>Where green infrastructure is affected, applicants should aim to ensure the functionality and connectivity of the green infrastructure network is maintained and any necessary works are undertaken, where possible, to mitigate any adverse impact and, where appropriate, to improve that network and other areas of open space, including appropriate access to new coastal access routes, National Trails and other public rights of way (paragraph 5.180).</p>	
<p>The Secretary of State should also consider whether mitigation of any adverse effects on green infrastructure or open space is adequately provided for by means of any planning obligations, for example, to provide exchange land and provide for appropriate management and maintenance agreements. Any exchange land should be at least as good in terms of size, usefulness, attractiveness, quality and accessibility. Alternatively, where Sections 131 and 132 of the Planning Act 2008 apply, any replacement land provided under those sections will need to conform to the requirements of those sections (paragraph 5.181).</p>	
<p>Public rights of way, National Trails, and other rights of access to land (eg open access land) are important recreational facilities for walkers, cyclists and equestrians. Applicants are expected to take appropriate mitigation measures to address adverse effects on these resources and, where appropriate, to consider what opportunities there may be to improve access. In considering revisions to an existing right of way consideration needs to be given to the use, character, attractiveness and convenience of the right of way. The Secretary of State should consider whether the mitigation measures put forward by an applicant are acceptable and whether requirements in respect of these measures might be attached to any grant of development consent</p>	

Summary of NPS requirement	How and where considered in the PEIR
(paragraph 5.184). Public rights of way can be extinguished under Section 136 of the Act if the Secretary of State is satisfied that an alternative has been or will be provided or is not required (paragraph 5.185).	

National Planning Policy Framework

- 18.2.5 The National Planning Policy Framework (NPPF) (Ministry of Housing, Community and Local Government, 2021) sets out a framework for planning policies and decision making in England and is a material consideration in planning decision making. Policies relevant to this topic are as follows.
- The NPPF highlights the importance of access to high quality open spaces and opportunities for sport and physical activity to the health and well-being of communities (paragraph 98), and states that existing open space, sports and recreational buildings and land should not be built on unless certain criteria are met (paragraph 99).
 - The NPPF also highlights the need for planning policies and decisions to protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users, for example by adding links to existing rights of way networks including National Trails (paragraph 100).
 - In relation to conserving the natural environment, the NPPF states that planning policies and decisions should contribute to and enhance it by, *inter alia*, ‘recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland’ (paragraph 174 (b)). Best and most versatile agricultural land is described as ‘Land in grades 1, 2 and 3a of the Agricultural Land Classification’ (Annex 2 - page 65).
- 18.2.6 The National Planning Practice Guidance (NPPG) supports the NPPF and provides guidance across a range of topic areas. The following parts of the NPPG are relevant to this topic.
- Guidance on the natural environment includes the need to take into account the economic and other benefits of the ‘best and most versatile’ agricultural land (Ministry of Housing, Communities and Local Government, 2019 paragraph 001).
 - Guidance in relation to recreational resources is provided under the headings of ‘Open space, sports and recreation facilities’ and ‘Public rights of way and National Trails’, which reiterates that these form an important component of sustainable transport links and should be protected or enhanced (Ministry of Housing, Communities and Local Government, 2014 paragraphs 001 & 004).

Local Planning Policy

- 18.2.7 Gatwick Airport lies within the administrative area of Crawley Borough Council and adjacent to the boundaries of Mole Valley District Council to the north west, Reigate and Banstead Borough Council to the north east and Horsham District Council to the south west. The administrative area of Tandridge District Council is located approximately 1.9 km to the east of Gatwick Airport, while Mid Sussex District Council lies approximately 2 km to the south east. Gatwick Airport is located in the county of West Sussex and immediately adjacent to the bordering county of Surrey.

18.2.8 The relevant local planning policies applicable to agricultural land use and recreation based on the extent of the study area for this assessment are listed in Table 18.2.2, with further detail provided in Appendix 18.2.1.

Table 18.2.2: Local Planning Policy

Administrative Area	Plan	Policy
Adopted Policy		
Crawley	Crawley 2030: Crawley Borough Local Plan 2015-2030 (2015)	CH11 Rights of Way & Access to the Countryside
		ENV4 Open Space, Sport & Recreation
		ENV5 Provision of Open Space & Recreational Facilities
		EC9 Rural Economy
Reigate and Banstead	Reigate and Banstead Local Plan: Core Strategy (2014)	CS2 Valued Landscapes & the Natural Environment
		CS12 Infrastructure Delivery
	Reigate and Banstead Local Plan Development Management Plan 2018-2027 (2019)	OSR1 Urban Open Space
		NHE1 Landscape Protection
		NHE4 Green/ Blue Infrastructure
		TAP1 Access, Parking & Servicing
Emerging Policy		
Crawley	Draft Crawley Borough Local Plan 2021-2037 (2021)	Policy OS1: Open Space, Sport and Recreation
		Policy OS2: Provision of Open Space and Recreational Facilities
		Policy OS3: Rights of Way and Access to the Countryside
		Policy EC13: Rural Economy
		Policy GI1: Green Infrastructure
		Policy ST1: Development and Requirements for Sustainable Transport

18.3. Consultation and Engagement

18.3.1 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.

- 18.3.2 Following consultation with the statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion on 11 October 2019.
- 18.3.3 Key issues raised in this Scoping Opinion specific to agricultural land use and recreation are listed in Table 18.3.1, together with details of how these issues have been addressed within the PEIR.

Table 18.3.1: Summary of Scoping Responses

Details	How/where addressed in PEIR
<p>Potential impacts from the Proposed Development on the nature and character of recreational resources through disturbance during construction and operation is omitted in the Scoping Report and should be assessed in the ES. (Scoping Opinion ID 4.12.1)</p>	<p>The assessment of potential effects on the nature and character of recreational resources within the study area is scoped into the assessment (see Table 18.4.1).</p> <p>The effects on the nature and character of recreational resource arising from disturbance during construction and operation as a result of the Project have been considered in Section 18.9 of this PEIR and will be carried forward to the ES.</p>
<p>The ES should provide the date of when the data that has been used to inform the baseline and assessment was last updated to ensure that the information being used is current. (Scoping Opinion ID 4.12.2)</p>	<p>Details of the surveys undertaken and the resources used to inform the baseline are presented in Section 18.4.</p>
<p>All information provided as a document or figure within the report or derived from other sources should be made clear through appropriate referencing in the ES. (Scoping Opinion ID 4.12.3)</p>	<p>Data have been provided as technical appendices where required. The source of all data is provided in the form of a reference list in Section 18.15 of this chapter.</p>
<p>Any agricultural land classification should be supported by guidance and accurate, current data and professional judgement in the ES to determine sensitivity of receptors and the degree to which any land temporarily or permanently affected/lost could be considered significant. (Scoping Opinion ID 4.12.4)</p>	<p>The approach to determining the sensitivity of receptors and effects on any temporarily or permanently affected/lost agricultural land has been based on relevant guidance; accurate, current data; and professional judgement. Details of the methodology used in this PEIR is provided in Section 18.4 and the assessment of effects in Section 18.9.</p>
<p>The scope of user surveys – which should include peak and shoulder periods – and the ‘characteristics’ of agricultural land and soil structure should be clearly defined in relation to baseline conditions and application of sensitivity of receptors. (Scoping Opinion 4.12.5)</p>	<p>User surveys have been completed for National Cycle Route 21 through Riverside Garden Park, which is used by both cyclists and walkers. These surveys have been undertaken at appropriate times to ensure that the peak usage is captured. The conclusions from this survey are summarised in Section 18.6 and full details included at Appendix 18.6.3 of this chapter of the PEIR.</p> <p>The characteristics of agricultural land and soil structure have been clearly defined in Section 18.6</p>

Details	How/where addressed in PEIR
	of this PEIR and will form the basis of the assessment within the ES.
The Scoping Report does not explicitly define the study area. The ES should clearly define a study area based on the Zone of Influence of the Proposed Development with reference to relevant and up to date guidance. (Scoping Opinion 4.12.6)	The study area used to undertake an assessment of effects is presented in Section 18.4 of this PEIR.
Where soil excavated for the Proposed Development is to be stored and / or reused, cross reference should be made to other relevant aspect chapters and the assessment of likely significant effects. (Scoping Opinion 4.12.7)	This methodology for the stripping, storage and reinstatement of soils within the Project will be provided within the soil management strategy for the Project. See Section 18.8 of this PEIR – this will be considered further as part of the ES.
Statistics for agricultural land use in 2016 appears to have been grouped for Crawley and Mid Sussex and Reigate and Banstead and Epsom and Ewell when DEFRA provide statistics on a local authority basis. The ES should present data in a clear way to allow for accurate assessment of the likely significant effects and to avoid unintended bias in reporting. (Scoping Opinion ID 4.12.8)	The Defra statistics provide a context to the nature of agricultural land use in the vicinity of the Project as explained in Section 18.4. The detailed assessment of the effects of the Project on agricultural land use is based on the identification of the characteristics of the individual farm holdings affected as explained in Section 18.4.

18.3.4 Key issues raised during consultation and engagement with interested parties specific to agricultural land use and recreation are listed in Table 18.3.2, together with details of how these issues have been addressed within the PEIR.

Table 18.3.2: Summary of Consultation

Consultee	Date	Details	How/where addressed in PEIR
Land based working group with local planning authorities	20.08.2019 03.02.2020 29.07.2021	Discussion on the potential effects on land-based resources (including agricultural land use and recreation) arising from the Project and the proposed measures to mitigate these effects.	Mitigation measures relevant to this topic are set out in Section 18.8 and the assessment of potential effects on agricultural land use and recreational resources during the construction and operational phases of the project are set out in Section 18.9.

18.4. Assessment Methodology

Relevant Guidance

18.4.1 In addition to meeting the requirements of EIA as set out by The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended), the agricultural land use and recreation assessment has taken into account the following guidance documents:

- DMRB Volume 11, LA109: Geology and Soils (Highways England *et al.*, 2019);
- Design Manual for Roads and Bridges (DMRB) Volume 11, LA 104: Environmental Assessment and Monitoring (Highways England *et al.*, Revision 1 2020a);
- DMRB Volume 11, LA112: Population and Human Health (Highways England *et al.*, Revision 1 2020b);
- Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Department for Environment, Food and Rural Affairs (Defra), 2009); and
- Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land. Ministry of Agriculture, Fisheries and Food (MAFF) (1988).

18.4.2 Although originally developed for the assessment of highways projects, the principles set out within the DMRB provide a useful basis for assessment for other major infrastructure projects.

Scope of the Assessment

18.4.3 The scope of this PEIR has been developed in consultation with relevant statutory and non-statutory consultees as detailed in Table 18.3.1 and Table 18.3.2 and comprises the assessment of potential effects on the following resources during the construction and operational stages of the Project:

- agricultural land quality and soils;
- farm holdings;
- public rights of way;
- national cycle routes;
- other walking, cycling and horse riding routes; and
- public open space.

18.4.4 Taking into account the scoping and consultation process, Table 18.4.1 summarises the issues considered as part of this assessment.

Table 18.4.1: Issues Considered within the Assessment

Activity	Potential Effects
Construction Phase	
Construction and demolition activities, including construction of upgraded highway junctions	Permanent loss of topsoil/ best and most versatile agricultural land Loss and severance of land from farm holdings (temporary/permanent). Loss/reduction of accessible public open space (temporary/permanent). Effects on the alignment of public rights of way and cycle routes (temporary).
Use of construction compounds and creation of mitigation areas	Loss of best and most versatile agricultural land, loss of topsoil, soil erosion and changes to soil structure (temporary). Loss and severance of land from farm holdings (temporary/permanent). Loss/reduction of accessible public open space (temporary). Effects on the alignment of public rights of way and cycle routes (temporary).

Activity	Potential Effects
Operational Phase	
Use of airport, including upgraded highway junctions	<p>Permanent loss of topsoil/best and most versatile agricultural land for permanent land take</p> <p>Permanent loss or severance of land from farm holdings.</p> <p>Permanent effects to the nature and character of recreational resources.</p>

18.4.5 Effects which are not considered likely to be significant have been scoped out of the assessment. A summary of the effects scoped out is presented in Table 18.4.2.

Table 18.4.2: Issues Scoped Out of the Assessment

Issue	Justification
Effects on common land and allotments	There are no such resources within the study area or proximate to it that are likely to be affected by the Project and therefore no impact pathway has been identified.

Study Area

- 18.4.6 The DMRB (LA109 and 112) (Highways Agency *et al.*, 2019, 2020b) provides broad guidance regarding a study area for the assessment of effects, referencing the extent and characteristics of a project and the communities/wards affected in LA112 and the construction footprint/project boundary (including compounds and temporary land take) in LA109.
- 18.4.7 The study area for effects on recreation has taken into account the need to establish local travel patterns by rights of way/recreational users and to identify resources, such as land used by the community, that have the potential to be lost. Therefore, the recreation study area includes the Project site, with account taken of any resources that lie immediately adjacent to the site or link to it, together with any areas that may be required to mitigate for any temporary or permanent effects arising from the Project.
- 18.4.8 The agricultural assessment has been based on the agricultural land located within the Project site along with the wider agricultural land holding associated with any land affected by the Project.

Methodology for Baseline Studies

Desk Study

- 18.4.9 A desk study has been undertaken in 2021 in relation to soils, agricultural land classification (ALC) and farm holdings. Information has been collated from the following information sources:
- published soil survey and British Geological Survey (BGS) information;
 - Ministry of Agriculture, Fisheries and Food (MAFF) published 1 inch to 1 mile Provisional ALC Sheet;
 - Defra detailed ALC and soil survey work carried out in the study area;
 - site-specific climatic information taken from the agroclimatic datasets produced by the Meteorological Office for the MAFF ALC Guidelines (MAFF, 1988);

- Ordnance Survey maps at 1:25,000 scale to identify topographic characteristics of the survey area;
- Government farming statistical data produced by Defra for local authority areas to provide comparative information on agricultural land use within the study area; and
- land registry information for the land parcels within the Project site boundary.

18.4.10 A desk study to identify recreational resources within the study area was undertaken in 2019, and updated in 2021, using the following information sources:

- public rights of way from Surrey County Council's and West Sussex County Council's Interactive Definitive Maps;
- National Cycle Network routes from Sustrans at <https://www.sustrans.org.uk>;
- walking, horse riding and cycling routes from Reigate and Banstead Borough Council website, Crawley Borough Council website, Surrey County Council website, West Sussex Council website and Gatwick Greenspace Partnership;
- areas of public open space from Reigate and Banstead Borough Council and Crawley Borough Council websites and Horley Town Council;
- MAGIC (geographic information about the natural environment) at <http://magic.defra.gov.uk>; and
- Ordnance Survey maps at 1:25,000 scale.

Site-Specific Surveys

18.4.11 In addition to the desk study information on agricultural land use and soils, the assessment has been informed by site visits, information from liaison with local landowners and detailed ALC survey work in agricultural areas that would be potentially temporarily or permanently affected by the Project. This survey work was undertaken in September 2019 using a 1.2 metre Dutch hand auger to examine soil profiles at approximately 100 metre intervals across the survey areas. The results of this survey work are contained in Appendix 18.6.2.

18.4.12 A recreation survey was undertaken along National Cycle Route 21 which runs through the north-eastern area of Riverside Garden Park adjacent to the Gatwick Stream, on three occasions between May and August 2019 to ascertain the nature of the use of this area of public open space. The conclusions from this survey are summarised in Section 18.6 and full details included at Appendix 18.6.3 of this PEIR.

Assessment Criteria and Assignment of Significance

18.4.13 The significance of an effect is determined based on the sensitivity of a receptor and the magnitude of an impact. This section describes the criteria applied in this chapter to characterise the sensitivity of receptors and magnitude of potential impacts. The terms used to define magnitude and sensitivity are based on and have been adapted from those used in the DMRB methodology (Highways England *et al.*, 2020a), which is described in further detail in Chapter 6: Approach to Environmental Assessment.

Receptor Sensitivity/Value

18.4.14 The criteria for defining sensitivity/value for agricultural land use and recreational receptors are outlined in Table 18.4.3 and Table 18.4.4.

Table 18.4.3: Sensitivity Criteria for Agricultural Land Use Receptors

Sensitivity	Definition Used for Agricultural Land Use Receptors
Very high	Grade 1 and 2 agricultural land. Agricultural land holdings: <ul style="list-style-type: none"> areas of land in which the enterprise is wholly reliant on the spatial relationship of land to key agricultural infrastructure; and access between land and key agricultural infrastructure is required on a frequent basis (daily).
High	Grade 3a agricultural land. Agricultural land holdings: <ul style="list-style-type: none"> areas of land in which the enterprise is dependent on the spatial relationship of land to key agricultural infrastructure; and access between land and key agricultural infrastructure is required on a frequent basis (weekly).
Medium	Grade 3b agricultural land. Agricultural land holdings: <ul style="list-style-type: none"> areas of land in which the enterprise is partially dependent on the spatial relationship of land to key agricultural infrastructure; and access between land and key agricultural infrastructure is required on a reasonably frequent basis (monthly).
Low	Grades 4 or 5 agricultural land. Agricultural land holdings: <ul style="list-style-type: none"> areas of land which the enterprise is not dependent on the spatial relationship of land to key agricultural infrastructure; and access between land and key agricultural infrastructure is required on an infrequent basis (monthly or less frequent).
Negligible	Previously developed land with little potential to return to agriculture. Agricultural land holdings: <ul style="list-style-type: none"> areas of land which are infrequently used on a non-commercial basis.

Table 18.4.4: Sensitivity Criteria for Recreational Receptors

Sensitivity	Definition Used for Recreational Receptors
Very high	Community land and assets where there is a combination of the following: <ul style="list-style-type: none"> complete severance between communities and their land/assets, with little/no accessibility provision; alternatives are only available outside the local planning authority area; the level of use is very frequent (daily); and the land and assets are used by the majority (>=50%) of the community. Walkers, cyclists, horse riders: <ul style="list-style-type: none"> national trails and routes likely to be used for both commuting and recreation that record frequent (daily) use. Such routes connect communities with employment land uses and other services with a direct and convenient route. Little/no potential for substitution;

Sensitivity	Definition Used for Recreational Receptors
	<ul style="list-style-type: none"> ▪ routes regularly used by vulnerable travelers such as the elderly, school children and people with disabilities, who could be disproportionately affected by small changes in the baseline due to potentially different needs; and ▪ rights of way crossing roads at grade with >16,000 vehicles per day.
High	<p>Community land and assets where there is a combination of the following:</p> <ul style="list-style-type: none"> ▪ there is substantial severance between communities and their land/assets, with limited accessibility provision; ▪ alternative facilities are only available in the wider local planning authority area; ▪ the level of use is frequent (weekly); and ▪ the land and assets are used by the majority (>=50%) of the community. <p>Walkers, cyclists, horse riders:</p> <ul style="list-style-type: none"> ▪ regional trails and routes likely to be used for recreation and to a lesser extent commuting, that record frequent (daily) use. Limited potential for substitution; and ▪ rights of way crossing roads at grade with >8,000 – 16,000 vehicles per day.
Medium	<p>Community land and assets where there is a combination of the following:</p> <ul style="list-style-type: none"> ▪ there is severance between communities and their land/assets, but with existing accessibility provision; ▪ limited alternative facilities are available at a local level within adjacent communities; ▪ the level of use is reasonably frequent (monthly); and ▪ the land and assets are used by the majority (>=50%) of the community. <p>Walkers, cyclists, horse riders:</p> <ul style="list-style-type: none"> ▪ public rights of way and other routes close to communities which are used for recreational purposes, but for which alternative routes can be taken. These routes are likely to link to a wider network of routes to provide options for longer recreational journeys, and/or ▪ rights of way crossing roads at grade with >4,000 – 8,000 vehicles per day.
Low	<p>Community land and assets where there is a combination of the following:</p> <ul style="list-style-type: none"> ▪ limited existing severance between communities and their land/assets, with existing full Disability Discrimination Act compliant accessibility provision; ▪ alternative facilities are available at a local level within the wider community; ▪ the level of use is infrequent (monthly or less frequent); and ▪ the land and assets are used by the minority (<=50%) of the community. <p>Walkers, cyclists, horse riders:</p> <ul style="list-style-type: none"> ▪ routes which have fallen into disuse through past severance or which are scarcely used because they do not currently offer a meaningful route for utility/recreational purposes; and/or ▪ rights of way crossing roads at grade with <4,000 vehicles per day.
Negligible	<p>Community land and assets where there is a combination of the following:</p> <ul style="list-style-type: none"> ▪ no or limited severance or accessibility issues; ▪ alternative facilities are available within the same community; ▪ the level of use is very infrequent (a few occasions yearly); and ▪ the land and assets are used by the minority (<=50%) of the community. <p>Walkers, cyclists, horse riders: N/A</p>

Magnitude of Impact

18.4.15 The criteria for defining magnitude for agricultural land use and recreational receptors are outlined in Table 18.4.5 and Table 18.4.6 below.

Table 18.4.5: Impact Magnitude Criteria Agricultural Land Use

Magnitude	Definition Used for Agricultural Land Use
High	<p>Soils:</p> <ul style="list-style-type: none"> ▪ Physical removal or permanent sealing of more than 20 hectares of agricultural land. <p>Agricultural land holdings:</p> <ul style="list-style-type: none"> ▪ loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements eg direct acquisition and demolition of buildings and direct development of land to accommodate highway assets; and/or ▪ introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision.
Medium	<p>Soils:</p> <ul style="list-style-type: none"> ▪ physical removal or permanent sealing on 1 – 20 hectares of agricultural land; or ▪ permanent loss/reduction of one or more soil function(s) and restriction to current or approved future use. <p>Agricultural land holdings:</p> <ul style="list-style-type: none"> ▪ partial loss of/damage to key characteristics, features or elements eg partial removal or substantial amendment to access or acquisition of land compromising the viability of agricultural holdings; and/or ▪ introduction (adverse) or removal (beneficial) of severe severance with limited/moderate accessibility provision.
Low	<p>Soils:</p> <ul style="list-style-type: none"> ▪ temporary loss/reduction of one or more soil function(s) and restriction to current or approved future use. <p>Agricultural land holdings:</p> <ul style="list-style-type: none"> ▪ a discernable change in attributes, quality or vulnerability, or alteration to one (maybe more) key characteristics, features or elements eg amendment to access or acquisition of land resulting in changes to the operating conditions that do not compromise overall viability of agricultural holdings; and/or ▪ introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision.
Negligible	<p>Soils:</p> <ul style="list-style-type: none"> ▪ no discernable loss/reduction in soil function(s) that restrict current or approved future use. <p>Agricultural land holdings:</p> <ul style="list-style-type: none"> ▪ very minor loss or detrimental alteration to one or more characteristics, features or elements eg acquisition of non-operational land or buildings not directly affecting the viability of agricultural holdings; and/or ▪ very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision.
No change	<p>Soils:</p> <ul style="list-style-type: none"> ▪ no loss/reduction of soil function(s) that restrict current or approved future use. <p>Agricultural land holdings:</p> <ul style="list-style-type: none"> ▪ no loss or alteration of characteristics, features, or elements or accessibility; no observable impact in either direction.

Table 18.4.6: Impact Magnitude Criteria for Recreation

Magnitude	Definition Used for Recreation
High	<p>Community land and assets:</p> <ul style="list-style-type: none"> ▪ loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements eg direct acquisition and demolition of buildings and direct development of land to accommodate highway assets; and/or ▪ introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision. <p>Walkers, cyclists, horse riders:</p> <ul style="list-style-type: none"> ▪ >500m increase (adverse) or decrease (beneficial) in journey length.
Medium	<p>Community land and assets:</p> <ul style="list-style-type: none"> ▪ partial loss of/damage to key characteristics, features or elements eg partial removal or substantial amendment to access or acquisition of land compromising the viability of community assets; and/or ▪ introduction (adverse) or removal (beneficial) of severe severance with limited/moderate accessibility provision. <p>Walkers, cyclists, horse riders:</p> <ul style="list-style-type: none"> ▪ >250m-500m increase (adverse) or decrease (beneficial) in journey length.
Low	<p>Community land and assets:</p> <ul style="list-style-type: none"> ▪ a discernable change in attributes, quality or vulnerability, or alteration to one (maybe more) key characteristics, features or elements eg amendment to access or acquisition of land resulting in changes to the operating conditions that do not compromise overall viability of community assets; and/or ▪ introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision. <p>Walkers, cyclists, horse riders:</p> <ul style="list-style-type: none"> ▪ >50m-250m increase (adverse) or decrease (beneficial) in journey length.
Negligible	<p>Community land and assets:</p> <ul style="list-style-type: none"> ▪ very minor loss or detrimental alteration to one or more characteristics, features or elements eg acquisition of non-operational land or buildings not directly affecting the viability of community assets; and/or ▪ very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision. <p>Walkers, cyclists, horse riders:</p> <ul style="list-style-type: none"> ▪ <50m increase (adverse) or decrease (beneficial) in journey length.
No change	<p>Community land & assets and walkers, cyclists, horse riders:</p> <ul style="list-style-type: none"> ▪ no loss or alteration of characteristics, features, elements or accessibility; no observable impact in either direction.

Significance of Effect

18.4.16 The significance of the effect upon agricultural land use and recreation has been determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The method employed for this assessment is presented in Table 18.4.7. Where a range of significance levels is presented, the assessment for each effect is based upon expert judgement.

- 18.4.17 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by narrative to explain the conclusions reached.
- 18.4.18 For the purpose of this assessment, any effects with a significance level of minor or less are not considered to be significant in terms of the EIA Regulations. Effects of moderate significance are identified as having the potential to be significant, but professional judgement has been used to determine where this is the case.

Table 18.4.7: 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

- 18.4.19 A description of the significance levels is provided in the bullets below:
- Substantial: Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category.
 - Major: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process.
 - Moderate: These beneficial or adverse effects may be important but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a particular resource or receptor.
 - Minor: These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.
 - Negligible: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

18.5. Assumptions and Limitations of the Assessment

- 18.5.1 It has not been possible to include an area of land to the south of the M23 spur road within the ALC survey area at this time due to access limitations, as identified on Figure 18.6.2b. However, extensive detailed survey work has been undertaken on adjoining areas of the same soil type and

the availability of existing survey data enables a reasonable preliminary assessment to be made of the likely effects of the Project on agricultural land quality. On this basis, no assumptions and limitations have therefore been identified in the preparation of this chapter with regard to agricultural land use or recreation that would prevent a preliminary assessment of the potential effects being made.

18.6. Baseline Environment

Current Baseline Conditions

Agricultural Land Quality and Soils – Desk Study Information

Geology

- 18.6.1 Geological information is provided by the BGS Internet Portal and on published geological maps. The 1:50,000 BGS sheet covering the area around Gatwick (Sheet 302 Horsham) identifies that the local bedrock is the Weald Clay. This is a stiff, grey mudstone weathering to a brownish grey clay at the surface. There are bands of clay ironstone within it, but these produce the same kinds of soils as the main mass of mudstone.
- 18.6.2 Of more consequence in affecting the nature of the soils is the presence or absence of superficial drift. This includes patches of river terrace deposits. Published information on the soils (see below) indicates that much of the Weald Clay in the area is covered by superficial drift, which is too thin to be shown as a separate feature on the geological maps. This is possibly derived, at least partly, from the river terrace materials.
- 18.6.3 The geological map (Sheet 302 Horsham) also identifies an area of river alluvium along the course of the River Mole and its tributaries.
- 18.6.4 At the extreme south east of the map are the underlying deposits of the Upper Tunbridge Wells Sand, which forms part of the higher ground (the High Weald) to the south and east of Crawley.

Soils

- 18.6.5 There is no detailed soil map for the area and so the only published source of information is Sheet 6 (South East England) of the 1:250,000 scale National Soil Map. Figure 18.6.1 provides an extract from the published National Soil Map. It shows geographic groupings of soils called Soil Associations within the study area, usually related to specific parent materials. Within each Association there are likely to be a number of more tightly defined soil types known as Soil Series.
- 18.6.6 The National Soil Map shows a close correlation with the geology around the existing airport, though with simplification for reasons of scale. There can be a considerable range in the kinds of soils within a particular Association, usually because of local variations in the character and thickness of the superficial drifts, including some not shown on the geological map because they are too thin.
- 18.6.7 The relationship between geology and soils is shown in Table 18.6.1 below:

Table 18.6.1: Study Area – Soil Associations

Geology	Soil Association Code	Soil Association Name	Brief Description
Weald Clay (with thin superficial drift and patches of thicker drift)	711e and 711i	WICKHAM 1 and WICKHAM 5	Poorly drained clayey soils with slightly more loamy surface horizons and patches of more sandy but poorly drained soils on river terrace deposits
Weald Clay (with little or no superficial drift)	712b	DENCHWORTH	Poorly drained clayey soils
River Terrace Deposits	841d	SHABBINGTON	Poorly drained sandy soils
Alluvium	813d	FLADBURY 3	Poorly drained clayey soils
Upper Tunbridge Wells Sand	572i	CURTISDEN	Poorly and imperfectly drained silty and fine sandy soils

Agricultural Land Classification

- 18.6.8 The Provisional ALC 1:63,360 scale map for the area, Sheet 170 (London SW), and accompanying report indicate the soils on the Weald Clay, Tunbridge Wells Sand and the various superficial deposits in the area to be graded either undifferentiated subgrade 3 or grade 4 quality land.
- 18.6.9 The accompanying report identifies that soils developed on the Weald Clay in grade 3, ie those now shown as the WICKHAM and DENCHWORTH Associations are regarded as 'low in the grade' with the more clayey ones relegated to grade 4, a grading also applied to the soils on clayey alluvium. This information indicates that the soils from the WICKHAM association, which covers the majority of the agricultural land within Project site, would be expected to be classified as lower quality grade 3 or 4 land and would not therefore comprise the best and most versatile agricultural land.
- 18.6.10 Since the Provisional Map was published there has been a comprehensive revision to the ALC system and the application of this requires detailed, site-specific information to determine the ALC grade accurately. A number of areas around Crawley, Gatwick and Horsham have been subject to more detailed examination by Defra using the revised ALC system and the results of these surveys (taken from the Defra MAGIC website) are identified in Figure 18.6.2.
- 18.6.11 These surveys are useful in this area as they include surveys on most of the Soil Associations described above. Virtually all of the agricultural land surveyed in detail has been found to be of lower quality subgrade 3b. This pattern confirms the more subjective assessments made for the Provisional Map of the 1970s and identifies that the land in the vicinity of the existing airport is predominantly of lower quality and does not comprise the best and most versatile agricultural land.

Agricultural Land Quality and Soils - Site Survey

- 18.6.12 Survey work has been undertaken for this Project in the following areas:
- areas affected by elements of the Project where soils and agricultural land would be permanently lost; and
 - construction areas where soils would be temporarily disturbed during the construction period.
- 18.6.13 There are additional land parcels identified as potential areas for environmental mitigation that also comprise agricultural land. However, these have not been included within the detailed ALC survey, as the soil resources within these areas would remain *in situ* to facilitate the implementation of the environmental mitigation measures and the quality of the land within these areas would be retained.
- 18.6.14 The results of the detailed survey work are shown on Figure 18.6.2. The areas of surveyed land have been found to comprise entirely lower quality Subgrade 3b agricultural land. This is entirely consistent with the findings of the detailed survey work carried out by Defra on extensive areas of surrounding land, also shown on Figure 18.6.2.
- 18.6.15 The survey work to the north west of the airport shown on Figure 18.6.2 identified soils typical of the Denchworth soil associations. Profiles typically comprise heavy clay loam topsoils overlying slowly permeable and mottled clay subsoils at a depth of 20- 25 cm.
- 18.6.16 The surveyed land within the ownership of Gatwick to the east of the railway as shown on Figure 18.6.2 identified soils typical of the Wickham Soil Association. Profiles typically comprise a dark brown medium to heavy clay loam topsoil overlying a thin mottled heavy clay loam upper subsoil horizon and a slowly permeable mottled clay horizon at depth of 30 – 40 cm.

Farm Holdings – Desk Study Information

- 18.6.17 Defra farming statistical data produced for local authority areas from the June 2016 dataset (Defra, 2016) provide information on the distribution of agricultural land use within the areas likely to be affected by the Project. Table 18.6.2 provides a comparison of local authority agricultural land use with the distribution of agricultural land use in England as a whole.

Table 18.6.2: Defra Statistics for Agricultural Land Use 2016

	Cereals and Arable Cropping (hectares)	%	Fruit and Vegetables (hectares)	%	Grassland (hectares)	%
England	2,616,937	37	124,913	3	4,387,975	60
Crawley and Mid Sussex	2,318	19	116	<1	9,693	80
Horsham	4,220	18	235	1	18,675	81
Mole Valley	2,352	24	155	2	7,044	74
Tandridge	2,170	25	13	<1	6,403	75
Reigate and Banstead, Epsom and Ewell	794	24	0		2,575	76

- 18.6.18 The statistical data produced by Defra indicate that within the local authorities where agricultural land is affected by the Project it is predominantly used for grassland-based livestock agriculture.

There is a much higher percentage of this type of land use in these administrative areas than that identified within England as a whole.

Farm Holdings – Project Information

- 18.6.19 The distribution of agricultural land holdings that may be affected by the Project based on site visits and liaison with individual landowners is identified on Figure 18.6.3.
- 18.6.20 Holding 1 comprises land to the north and south of the M23 spur between the M23 Junction and the south terminal roundabout. The land to the north likely to be affected by the Project is either non-agricultural land or comprises an area of land that has been recently restored following the M23 Smart motorway works. To the south, the land is used for hay and/or horse grazing. The landowner does not farm the land and the land is let for hay or horse grazing on the basis of short term agreements.
- 18.6.21 The strip of land identified as Holding 2 forms part of the holding that includes the commercial property immediately to the north of it. The area is not used for agricultural production.
- 18.6.22 Holding 3 is entirely grassland and is used for hay and/or regular horse grazing and is used in conjunction with a livery yard to the north of the area. The land is owned by Surrey County Council and let out on a short term basis. The area forms part of the proposed Horley Business Park site, which is designated in planning policy but for which, as yet, no planning application has been submitted.
- 18.6.23 Holding 4a forms part of the Gatwick land holding. This area is grazed intermittently by a local livestock farmer on the basis of a short term agreement.
- 18.6.24 Holding 4b comprises an area of land recently purchased by Gatwick Airport. The grassland area is cut regularly, but is not used for any agricultural purpose.
- 18.6.25 Holding 5 is also owned by Surrey County Council and forms part of a larger block of land that comprises approximately 100 acres (40 hectares). The land is farmed by a tenant as part of a livestock based enterprise.
- 18.6.26 Holding 6 comprises land that forms part of the Aviation Museum holding. This land is not used for agricultural production, but is mown regularly and used as part of the museum facility.
- 18.6.27 Holding 7 comprises land that forms part of a land holding based at Brook Farm. The holding comprises areas of land to the south and north of the Horley Road. These areas comprise a total of approximately 50 acres (20 hectares) of land. The buildings and land within the holding support a number of different enterprises including some commercial units based at the farm, a clay pigeon shoot and grassland cut for hay or let for grazing.

Recreation

Public Rights of Way

- 18.6.28 The following public rights of way lie within the Project site boundary in West Sussex as shown on Figure 18.6.4.
- To the north of the airport, the Sussex Border Path, a long distance walk, runs generally from west to east along the alignment of public footpaths 347Sy (east of Horley Road);

346Sy (south of Charlwood Road and Povey Cross Road); and 346-2Sy and 355-1Sy (south of the A23).

- Public footpath 355Sy runs east-west across the railway line on a footbridge from its junction with 360Sy to its junction with the A23.
- Public footpath 358Sy runs south-westwards from the B2036 to its junction with public footpath 359Sy.
- Public footpath 359Sy runs westwards from the B2036 and then southwards adjacent to the existing car parking areas to its junction with Radford Road.
- Public footpath 360Sy runs south from Airport Way to the east of the railway line and through the existing car parking areas to its junction with 359Sy/361Sy. The Gatwick Station improvements require the current alignment of this public right of way to be moved in order to enable the construction of the new station concourse. This requires a diversion from the back of platform 7 to a route through the passenger terminal building, which is expected to be completed by 2022.
- Public footpath 360-1Sy runs generally south west and south from its junction with public footpath 359Sy to its junction with Radford Road.
- Public footpath 361Sy runs to the south of the existing car parking areas between public footpaths 359Sy and 360Sy.
- To the west of M23 Junction 9, public footpath 367Sy runs to the south of the M23 spur and then turns south outside the Project site boundary to meet Fernhill Road.
- To the south of the airport, public bridleway 352Sy runs northwards from the A23 to Church Road.

18.6.29 The following public rights of way lie within the Project site boundary in Surrey as shown on Figure 18.6.4.

- To the north of the M23 spur road, the Sussex Border Path runs along the alignment of Burstow Footpath 368, Horley Footpath 368 and Horley Footpath 367 up to the B2036.
- West of the B2036, the Sussex Border Path runs along the alignment of Horley Footpath 362a to the north of the Project site boundary and then crosses over the railway line and south along Horley Footpath 355a to the county boundary.
- To the east of the railway line, Horley Footpath 360 runs southwards to the county boundary to the north of Airport Way.
- To the north east of the Longbridge Roundabout in Horley, FP574 runs northwards along the boundary of the Project site between the A23 and Church Road.

National Cycle Routes

18.6.30 National Cycle Route 21 (NCR21) runs south from Greenwich out of London through Lewisham (the Waterlink Way) to Crawley, and then via East Grinstead and Eridge to Heathfield and Eastbourne. From Crawley it runs northwards between the A23 London Road and the railway line as a traffic free route to the east of the main airport campus. It then follows the alignment of the Gatwick Stream, crossing Airport Way to the north of the airport via a subway which exits in Riverside Park in Horley. NCR21 continues to follow the Gatwick Stream within the northern area of the park, becoming an on-road route between Riverside and Crescent Way (see Figure 18.6.4).

18.6.31 NCR21 provides an important non-vehicular route between Horley, Crawley and Gatwick Airport for use by cyclists and walkers. The West Sussex cycle journey planner shows NCR21 crossing a

local cycle route near to Horley railway station, which runs to the east over Balcombe Road and the M23 and to the west over Brighton Road and Reigate Road. It is also crossed by the Sussex Border Path, a long distance walk, just north of the South Terminal.

- 18.6.32 Recreation surveys were carried out on three days between May and August 2019 to provide an indication of the quantity and characteristics of the usage of NCR21 and the wider park on a weekday, a weekend day and on a weekend bank holiday day. The results of these surveys are described in Appendix 18.6.3 and concluded the following.
- NCR21 and the wider park are well used by pedestrians and cyclists on all days of the week.
 - It was observed on all survey days that the car park within Riverside Garden Park is also well used, with pedestrians observed accessing the western area of the park away from NCR21. This use was not recorded as part of the surveys.
 - The users comprised those who use NCR21 to get to and from their place of work, either on foot or by cycle and local residents who use the route and the wider park as a recreational resource.
 - During the week it was observed that Riverside Garden Park is also used as a resource for airport workers during lunch breaks.
 - The surveys identified a number of pedestrians who use the park as a resource either between flights at the airport or as a means of accessing local accommodation between connecting flights where these require an overnight stay.
- 18.6.33 Both the level of use and range of activities recorded on the survey days at this location and the characteristics of the users are likely to reflect those that may be expected during similar times of the week throughout the year and under similar dry and warm weather conditions. It is recognised that the numbers of people using Riverside Garden Park may have altered during the current COVID pandemic, with the potential for more recreational users and less airport-related use. However, it is anticipated that once COVID restrictions have been fully eased the overall level and type of use will be similar to that recorded in the 2019 survey.

Walking, Cycling and Horse Riding Routes

- 18.6.34 The main promoted walking route close to Gatwick Airport is the Sussex Border Path (see Figure 18.6.4). This route in total extends to approximately 240 km (150 miles) around the inland boundary of the county of Sussex, from Thorney Island, near Emsworth to Rye in East Sussex. It has been waymarked by Sussex Ramblers, who provide descriptions of each part of the route on their website.
- 18.6.35 Around Gatwick Airport, the Sussex Border Path runs along the alignment of existing public footpaths in Surrey and West Sussex. From the M23 it runs to the north of the M23 spur road along Surrey public footpaths 367 and 368, and then follows public footpath 362a before crossing the railway line and joining public footpath 355a to the west of Riverside Garden Park and running south to the county boundary to the north of Airport Way. In West Sussex it crosses Airport Way in a subway along the alignment of public footpath 355-1Sy and then follows public footpath 346-2Sy for approximately 2.45 km around the northern perimeter of the airport to the south of the A23 and Povey Cross Road. It continues to run between the airport and Charlwood Road and Horley Road along public footpaths 346Sy and 347Sy, which follow the approximate alignment of the River Mole. The Sussex Border Path then crosses Horley Road into Surrey and runs westwards along public footpath 344 towards Charlwood.

- 18.6.36 The Millennium Trail is a 28 km long distance path from Banstead Downs to Horley and was created by Reigate and Banstead Borough Council to mark the new century. In the vicinity of Gatwick Airport, the Millennium Trail largely follows the same route as the Sussex Border Path and finishes in Riverside Garden Park (see Figure 18.6.4). In 2016, Reigate and Banstead Borough Council published a guided and self-guided walks programme, which included events in Riverside Garden Park, but this does not appear to have been published since.
- 18.6.37 The Gatwick Greenspace Partnership publishes a calendar of walks covering the area between Horsham, Crawley, Horley, Reigate and Dorking. The project is supported by all local authorities and GAL and is managed by the Sussex Wildlife Trust. The 2019/2020 programme did not list any walks within the Project site boundary but there were some in the surrounding settlements and countryside including at Charlwood and Rusper. A 2021 programme of walks has not yet been published.

Public Open Space

- 18.6.38 Riverside Garden Park in Horley is designated as urban open space of high value by Reigate and Banstead Borough Council in their Urban Open Space Assessment and Review (Reigate and Banstead Borough Council, 2018) and forms part of the Riverside Green Chain. It is located on the south western edge of Horley between areas of residential development to the north east and the A23 and Gatwick Airport to the south west (see Figure 18.6.5). It is owned by Reigate and Banstead Borough Council, who are responsible for the day to day management of the park.
- 18.6.39 The park, which covers an area of approximately 10 hectares, was originally part of Horley Common. The history of the site is described on the Horley Town Council website which explains that:
- 'Later it was enclosed and farmed, before a racecourse was developed on neighbouring land. In the 1930s, the racecourse land was incorporated in the new Gatwick Aerodrome. Since then the site boundaries have been fixed by the expansion of Horley and Gatwick Airport. The adjacent residential development took place in the 1950-60s'.*
- 18.6.40 Today, Riverside Garden Park comprises public open space bounded to the north by the Gatwick Stream and features areas of woodland and a man-made lake. Despite the proximity of the A23 and the airport, these features are largely screened from view by embankments and tree planting. Horley Town Council describes the park as being a favourite local dog walking venue, with fishing popular along the Gatwick Stream and around the lake. In addition, cyclists use NCR21 to get to and from Gatwick Airport.
- 18.6.41 Riverside Garden Park narrows to the north west as it follows the River Mole to the A23. On the northern side of the A23 at this location, other areas of open space lie within the Project site boundary. These areas, which lie to the east of the River Mole, comprise St Bartholomew's Church and the former Horley Anderson Centre and Playing Fields and are also designated as urban open space of high overall value by Reigate and Banstead Council in the Urban Open Space Assessment and Review (Reigate and Banstead Borough Council, 2018) (see Figure 18.6.5). They are also part of the Riverside Green Chain, a Reigate and Banstead Borough Council commitment to safeguard the riverine environment around Horley and provide opportunities for both formal and informal recreation.

Future Baseline Conditions

Initial Construction Phase: 2024-2029 and First Full Year of Opening: 2029

Agricultural Land Use

- 18.6.42 There are unlikely to be any significant changes to the agricultural land use baseline described in this chapter during the period up to 2029 as a result of future improvements within Gatwick Airport itself, in relation to current planning policy or known trends in agriculture and land use. Similarly, it is not anticipated that agricultural land uses resources within the study area will be specifically vulnerable to the effects of climate change during this period.

Recreation

- 18.6.43 There are unlikely to be any significant changes to the recreational baseline described in this chapter during the period up to 2029 as a result of future improvements within the airport itself or arising from current planning policy (which includes measures to protect and enhance recreational resources, including in relation to new development, to around 2030). Similarly, it is not anticipated that recreational resources within the study area will be specifically vulnerable to the effects of climate change during this period.

Interim Assessment Year: 2030-2032

Agricultural Land Use

- 18.6.44 There are unlikely to be any significant changes to the agricultural land use baseline described in this chapter during the period up to 2032 as a result of future improvements within Gatwick Airport itself, in relation to current planning policy or known trends in agriculture and land use. Similarly, it is not anticipated that agricultural land uses resources within the study area will be specifically vulnerable to the effects of climate change during this period.

Recreation

- 18.6.45 There are unlikely to be significant changes to the recreational baseline described in this chapter during the period up to 2032 as a result of future improvements within the airport itself. However, by this date it is expected that the trend towards warmer, drier summers may result in an extension to the summer season for outdoor activities, so it is likely that more people will take part in outdoor recreation. These drier conditions may lead to some depletion of existing vegetation and soil erosion which might affect local recreational resources. In such cases, it has been assumed that appropriate measures would be established by the relevant authorities/bodies to manage these changes and these would be incorporated into emerging local planning policy from around 2030.

Design Year: 2033-2038

Agricultural Land Use

- 18.6.46 There are unlikely to be significant changes to the agricultural land use baseline described in this chapter during the period up to 2038 as a result of future improvements within the airport itself.
- 18.6.47 A report prepared for Defra and the Welsh Government 2014, based on research undertaken by Cranfield University and ADAS (Keay *et al.*, 2014) considers the impact of climate change on the capability of land for agriculture.

- 18.6.48 In terms of the quality of agricultural land and the proportions on best and most versatile land, the findings of the report *'suggest that the greatest impact on the proportion of BMV in England and Wales will take place after 2030'*.
- 18.6.49 For sites which are affected by soil wetness, the report concluded that the quality of the land would be *'Largely unaffected over most of England and Wales mainly because, even though the start and end dates of field capacity are likely to change, the duration remained constant'*.
- 18.6.50 Where droughtiness is the main limitation, the retention of high quality land would be likely to become more dependent on the use of irrigation to maintain productivity and versatility in agricultural land use.
- 18.6.51 Overall the report concludes that *'the findings of this project do not undermine the current use of the ALC system within land use planning'*.
- 18.6.52 In this case therefore, where soil wetness is the main limiting factor, the quality of the land would, based on this recent research, be unlikely to be significantly affected by climate change.

Recreation

- 18.6.53 There are unlikely to be significant changes to the recreational baseline described in this chapter during the period up to 2038 as a result of future improvements within the airport itself. However, the trend towards warmer, drier summers is predicted to continue resulting in an extension to the summer season for outdoor activities, with the potential for greater participation in outdoor recreation. These continuing drier conditions may lead to some depletion of existing vegetation and soil erosion which might affect local recreational resources. In such cases, it has been assumed that appropriate measures would be established by the relevant authorities/bodies to manage these changes and these would be incorporated into emerging local planning policy.

18.7. Key Project Parameters

- 18.7.1 The assessment has been based on the parameters identified within Chapter 5: Project Description.
- 18.7.2 Table 18.7.1 below identifies the key parameters relevant to this assessment. Where options exist, the maximum design scenario selected is the one having the potential to result in the greatest adverse effect on an identified receptor or receptor group. Effects of greater adverse significance are not predicted to arise should any other option identified in Chapter 5 be taken forward in the final design of the Project.

Table 18.7.1: Maximum Design Scenarios

Potential Impact	Maximum Design Scenario	Justification
Initial Construction Phase: 2024-2029 (ie up to first opening of northern runway)		
Area within Project site boundary	838 hectares	This is the maximum area affected by land take or direct construction activity. Within this area, effects on agricultural land and rights of way have been considered, although in reality much of this area consists of the existing operational airport and therefore, most impacts would arise in the areas outside the existing operational airport.
Permanent land take from agricultural land	12.4 hectares	Area of existing agricultural land to be required on a permanent basis.
Temporary land take from agricultural land	3.3 hectares	Area of existing agricultural land to be required on a temporary basis.
Loss of public open space and disruption to existing public rights of way and other linear recreational routes	North and South Terminal roundabout improvements	These works would represent the maximum land take and area of disruption, which may require widening of the highway or roundabout into the adjacent areas of public open space, and temporary/permanent effects on the alignment of public rights of way and other linear recreational routes.
2030-2032		
Loss of public open space and disruption to existing public rights of way and other linear recreational routes	Ongoing North and South Terminal roundabout improvements and works to Longbridge Roundabout.	These works would represent the maximum land take and area of disruption, which may require widening of the highway or roundabout into adjacent areas of public open space, and temporary/permanent effects on the alignment of public rights of way and other linear recreational routes.
2033-2038 (up to construction of final elements)		
Restoration of temporary land take from agricultural land	3.3 hectares	Restoration of areas of agricultural land temporarily required for highway improvement works.
Design Year: 2038 (ie operational)		
Parameters assumed would be as above.		

18.8. Mitigation and Enhancement Measures Adopted as Part of the Project

18.8.1 A number of measures have been designed into the Project to reduce the potential for impacts on agricultural land use and recreation. These are listed in Table 18.8.1. The measures relating to construction are also set out in the Outline Code of Construction Practice (see Appendix 5.3.1).

Table 18.8.1: Mitigation and Enhancement Measures

Measures Adopted as Part of the Project	Reason
Mitigation	
A soil management strategy to ensure the conservation of soil resources; avoidance of damage to soil structures; maintenance of soil drainage; and the reinstatement, where required, of soil profiles as near as possible to their former condition.	To maintain the quality of agricultural land temporarily affected by disturbance during the construction period.
Implementation of measures to reduce, as far as possible, the effects of construction activities on farm holdings. Where appropriate, these would include the maintenance of farm access locations; provision of appropriate fencing; maintenance of water supplies; co-ordination of timing of construction works to facilitate farming operations; and measures to address the potential risks of the spread of animal and plant diseases.	To maintain the operation of farming enterprises during the construction period.
Provision of replacement public open space and/or improvement/enhancement of current public open space facilities to mitigate for the loss of land designated as public open space which it has been necessary to acquire and use to facilitate the delivery of the Project.	Where land used by the community, including public open space, is taken for a road scheme it will generally be necessary to provide exchange land which must not be smaller in area and must be equally advantageous to the users of the land required by the road.
Provision of a permanent diversion to the Sussex Border Path to the south of the A23 arising from the new North Terminal junction.	To maintain public access along the Sussex Border Path during construction and operation.
Provision of a pedestrian link between the footway on the northern side of the A23 near the Longbridge Roundabout into Riverside Garden Park.	To provide a public benefit through the provision of an additional pedestrian route into Riverside Garden Park.
Provision of an additional pedestrian route linking Riverside Garden Park with the Sussex Border Path to the north of the A23.	To provide a public benefit through the provision of an additional pedestrian route through Riverside Garden Park to link to the Sussex Border Path.
Management measures to avoid severance and safely maintain public access along NCR21 and the Sussex Border Path during construction activities associated with the North Terminal roundabout improvements.	NCR21 is a national long-distance cycle route and the Sussex Border Path is a long distance promoted route. These routes should remain open during construction.

Measures Adopted as Part of the Project	Reason
Management measures to avoid severance and safely maintain public access along the Sussex Border Path during construction activities associated with the South Terminal roundabout improvements.	The Sussex Border Path is a promoted long-distance route and should remain open during construction.
Management measures to safely maintain public access along the public footpaths around the perimeter of Pentagon Field during construction of the new car parking area.	These footpaths form part of, and link to, other routes within the public rights of way network and should remain open for use during construction.
Management measures or temporary diversions to safely maintain access along the public rights of way in the vicinity of the proposed construction compound to the south of the M23 Spur, east of the South Terminal roundabout.	To maintain pedestrian access north from Fernhill Road and then west to Balcombe Road.
Monitoring	
The soil management strategy (see mitigation measures above) would include the provision of suitably qualified person to monitor the quality of the soil stripping storage and restoration operations	To maintain the quality of agricultural land temporarily affected by disturbance during the construction period.
Enhancement	
Provision of new recreational route around the proposed flood compensation area to the east of Museum Field to enhance local public access opportunities.	To provide a circular route opportunity to benefit to local communities for health and well-being.

18.9. Assessment of Effects

Initial Construction Phase: 2024-2029

Agricultural Land Use

Agricultural Land Quality

- 18.9.1 During this phase of the Project there would be temporary agricultural land take associated with the start of construction of the South Terminal roundabout improvements. This could affect land to the north of the existing South Terminal roundabout. Detailed survey work carried out by Defra indicates that the area to the north of South Terminal roundabout comprises entirely lower quality Subgrade 3b land.
- 18.9.2 Within these areas, there would be a temporary loss of approximately 3.3 hectares of lower quality Subgrade 3b land. Taking into account the amount of land affected and its quality, the loss is assessed as a medium long term temporary magnitude of impact on a receptor of medium sensitivity. The significance of this temporary loss of agricultural land quality is therefore assessed to be of **moderate adverse** significance. In this instance, this is not considered to be significant in terms of the EIA Regulations, as no best and most versatile land resource (Grades 1, 2 or 3a land) is affected.

- 18.9.3 It is assumed that the permanent loss of soils and agricultural land quality would take place during this phase and that there would be permanent land take of approximately 13.2 hectares during this period. This would be primarily associated with the development of surface parking on Pentagon Field, the ground lowering (to create a flood compensation area) within Museum Field, land required for the South Terminal roundabout and Longbridge Roundabout improvements (and associated drainage works). The detailed ALC survey of the majority of these areas has shown them to comprise entirely lower quality Subgrade 3b land. It has not been possible to survey the land to the north of the Longbridge Roundabout but this comprises soils from the Wickham 1 soil association, which is assessed as likely to comprise entirely lower quality Subgrade 3b land, limited by susceptibility to soil wetness.
- 18.9.4 The loss of this land is assessed as a medium permanent magnitude of impact on a receptor of medium sensitivity. The significance of this permanent loss of agricultural land quality is therefore assessed to be of **moderate adverse** significance. This is not considered to be significant, as no best and most versatile land resource (Grades 1, 2 or 3a land) is affected.

Farm Holdings

- 18.9.5 There is potential for temporary disruption to Holding 3 which would be affected by construction requirements associated with the South Terminal roundabout improvements. This would affect an area of approximately 3.3 hectares.
- 18.9.6 The owner of this holding does not operate a farming enterprise and the land is let on short term arrangements, mainly as grazing land for horse grazing and hay making. The temporary loss of this area of land would not cause severance from the remainder of the land holding. The temporary loss of land due to potential construction requirements is assessed to have a low magnitude of impact on areas of medium sensitivity grassland use. The temporary effect of the loss of these areas is therefore assessed to be of **minor adverse** significance. This is not considered to be significant in terms of the EIA Regulations.
- 18.9.7 Permanent loss of agricultural land would also occur during this phase. This would include the following land holdings.
- Holding 1: A strip of land to the north of the M23 spur, which comprises a non-agricultural area, would be permanently affected.
 - Holding 2: A strip of grassland north of the M23 spur, which is not used for agricultural production, would be permanently affected.
 - Holding 3: Permanent requirement for an area of approximately 3.6 hectares of land associated with the South Terminal roundabout improvements. This land is currently let by the landowner for horse grazing and/or hay making.
 - Land within the Gatwick land holding, Holding 4a and 4b: Area 4a is currently let on a short term basis for cattle grazing and area 4b, a recent addition to the Gatwick estate, is not being used for agricultural production.
 - Holding 5: Approximately 0.9 hectares required for junction improvement and environmental mitigation works associated with the road junction works at Longbridge roundabout. This area represents a total of less than 3% of the holding tenanted from the landowner.
 - Land within Holding 6. This area of approximately 7.1 hectares forms part of the Aviation Museum land holding, which does not form part of a farming enterprise.

- Land within Holding 7. This area of approximately 10.7 hectares of land forms part of the Brook Farm holding. The Project could affect the current clay pigeon shooting location and areas of grass keep that are let to local farmers.

- 18.9.8 The permanent loss of land from these holdings would have limited impacts on the operation of Holdings 3, 5 and 7, where agricultural operations are taking place, with the enterprises within Holding 7 potentially most affected by the potential land take associated with the provision of environmental mitigation. There would be no effect on agricultural operations associated with the loss of land from holdings 1, 2, 4 and 6.
- 18.9.9 The permanent loss of a strip of approximately 3.6 hectares from Holding 3 would not affect the continued use of the remaining areas of these fields for horse grazing or hay making.
- 18.9.10 The loss of approximately 0.9 hectares from Holding 5, for highway improvements and environmental mitigation works would affect an area within a single field of a larger tenanted landowner where the current livestock-based operation would not be jeopardised by this limited loss of land and where there would be no severance from the area of the remaining holding.
- 18.9.11 The land within Holding 7 is not used by the owner as part of a larger agricultural enterprise but is partially used for a clay pigeon shoot operation with other areas let out to local farmers. Whilst there would be a loss of income to the owner associated with the permanent loss of this land, it is not being actively farmed or run as part of a productive agricultural enterprise by the owner of the holding.
- 18.9.12 It is assessed that these effects would overall have a low permanent magnitude of impact on enterprises of a medium sensitivity.
- 18.9.13 The overall significance of effect arising from the permanent loss of land from these holdings is therefore assessed to be of **minor adverse** significance. This is not considered to be significant in terms of the EIA Regulations.

Recreation

South Terminal

- 18.9.14 There is the potential for disruption to access along the following public rights of way towards the end of the initial construction phase as a result of the commencement of works on the South Terminal roundabout improvements and the associated construction compound which may be located to the south of the M23 Spur:
- the Sussex Border Path, which runs to the north of the M23 Spur along the alignment of public footpaths 367 and 368; and
 - public footpath 367Sy which runs in a north-south direction between the M23 Spur and Fernhill Road.
- 18.9.15 To minimise the disruption to the Sussex Border Path it is proposed to maintain the route along its current alignment outside the perimeter fencing of the construction works for public safety. It is also proposed to implement the following public access improvements during this period for the benefit of local communities for health and well-being within the Project site boundary:
- Provision of new circular recreational route around the flood compensation area to the east of Museum Field, with a link to the existing alignment of the Sussex Border Path.

- 18.9.16 With regards to public footpath 367Sy, it may be necessary to temporarily divert the northern part of the route that falls within the construction compound and that section that currently runs to the south of the M23 Spur. If this is required, it is proposed that the public footpath is temporarily diverted westwards along the edge of the Project site boundary to meet its existing alignment to the east of Balcombe Road. This would not result in any change to the length of the route.
- 18.9.17 There is also the potential for the disruption to the existing public footpath (359Sy) that runs along the boundary of the Pentagon Field during the construction activities associated with the new surface decked car parking. From Balcombe Road, the public footpath runs along an existing surfaced track and would be separated from the construction site by an existing hedgerow. It also runs through existing woodland planting along part of its route alongside the existing South Terminal car parks but where the route is more open it is proposed that it is maintained along its existing alignment outside the perimeter fencing on the construction site for the safety of pedestrians. To mitigate against any disruption to the use of this public footpath, it is proposed that the route would continue to be maintained along its existing alignment outside the perimeter fencing on the construction site for the safety of pedestrians.
- 18.9.18 The sensitivity of the promoted Sussex Border Path is assessed as medium, as it is a promoted route approximately circumnavigating the county, used for recreational purposes with links to the wider network of routes. The sensitivity of the other public rights of way and the proposed new circular route which link to the Sussex Border Path are also assessed as medium. The magnitude of the impact on all the existing routes, which would either be maintained along their existing alignment or temporarily diverted with no significant change in length, is assessed as low (adverse). The provision of a new permanent circular route and links to the Sussex Border Path would result in a low (beneficial) magnitude of impact and would be of medium sensitivity.
- 18.9.19 Taking all these factors into account, the temporary effects on public rights of way during construction are assessed to be of **minor adverse** significance, and the overall effect on recreational routes and facilities during operation is assessed to be of permanent **minor beneficial** significance. This is not considered to be significant in terms of the EIA Regulations.

North Terminal

- 18.9.20 The North Terminal roundabout improvements are anticipated to be commenced in 2029. This is likely to include a new grade-separated junction as detailed in Chapter 5: Project Description. It is anticipated that these works would be generally undertaken within the existing highway boundary, subject to approval by Highways England, although there may be some encroachment into southern fringe of Riverside Garden Park.
- 18.9.21 These works have the potential to result in the following impacts on recreational resources:
- The permanent loss of approximately 0.75 hectares of public open space along the southern boundary of Riverside Garden Park bringing the highway boundary close to the south eastern corner of the lake and resulting in the loss of mature vegetation along the existing highway embankment. Together, these changes would reduce the overall area of open space and change the amenity of the southern area of the park as a result of changes to the visual and acoustic environments (see Chapters 8 and 14 of the PEIR) but it is anticipated that it would be possible to maintain a pedestrian route along the southern edge of the lake.
 - There would be no change to the alignment of NCR21 within the south eastern corner of Riverside Garden Park and under the existing A23 during the construction works. However,

there is the potential for some changes to the amenity of the route in this location (see Chapter 8 of the PEIR).

- A section of the existing route of the Sussex Border Path to the south of the A23 would be partly within the land take area for the new junction.

18.9.22 To mitigate for these impacts the following measures have been incorporated into the Project design.

- New areas of public open space would be created totalling a minimum of 0.75 hectares (or an area equivalent to the total loss of public open space), with links to the existing area of Riverside Garden Park, St Bartholomew's Church and the former Horley Anderson Centre and Playing Fields, and the residential areas of Horley to the north and east.
- It is also proposed to make a commitment towards improvements/enhancements within Riverside Garden Park in consultation with Reigate and Banstead Borough Council.
- Provision of a permanent diversion to the Sussex Border Path to the south of the A23 arising from the new North Terminal roundabout.
- Provision of a pedestrian link between the footway on the northern side of the A23 footway near the Longbridge Roundabout into Riverside Garden Park.
- Provision of an additional pedestrian route linking Riverside Garden Park with the Sussex Border Path to the north of the A23.

18.9.23 The sensitivity of the designated open space within Riverside Garden Park and the promoted Sussex Border Path is assessed as medium, as they are both well used resources by the surrounding communities and visitors.

18.9.24 The magnitude of the impact on Riverside Garden Park is assessed to be medium adverse. The loss of land would not adversely affect the integrity of this resource and would be mitigated by the provision of new areas of public open space which would serve the local community, although these would not be immediately contiguous with the park. There would also be a change to the amenity of the southern area of the park, predominantly as a result of changes to the visual environment both during construction and in operation until new highway planting matures. However, improvements/enhancements within the park to meet the needs of all the users are anticipated. Taking these factors into account, the effect on Riverside Garden Park is assessed to be of permanent **moderate adverse** significance. This is considered to be significant in terms of the EIA Regulations.

18.9.25 The magnitude of the impact on the alignment of the Sussex Border Path in the maximum design scenario is assessed to be low beneficial. An existing section of the route would be lost but the amenity of the Sussex Border Path at this location within the airport is not visually attractive, and there is the opportunity to improve the experience of users with a more attractive permanent on-airport diversion. This diversion would be put in place prior to the commencement of construction works to maintain access along the Sussex Border Path during this phase of the Project. The provision of an additional pedestrian route within Riverside Garden Park from the A23 footway near to the Longbridge Roundabout would provide an alternative link to the Sussex Border Path from the residential areas of Horley, which would be to the benefit of the local and wider community. Sensitivity would be medium. Taking these factors into account, the effect on the Sussex Border Path is assessed to be of permanent **minor beneficial** significance. This is not considered to be significant in terms of the EIA Regulations.

Further Mitigation and Future Monitoring

- 18.9.26 No further mitigation or monitoring measures with regard to agricultural land use receptors are proposed.

Significance of Effects

- 18.9.27 No further mitigation or monitoring is required. Therefore, the significance of effects would remain as presented above.

2030 - 2032

Agricultural Land Use

Agricultural Land Quality

- 18.9.28 The assessment of effects for the temporary and permanent loss of land would be the same as for the 2024-2029 initial construction phase.

Farm Holdings

- 18.9.29 The assessment of effects for the temporary and permanent loss of land would be the same as for the 2024-2029 initial construction phase.

Recreation

- 18.9.30 The North and South Terminal junction improvements which would commence towards the end of the initial construction phase, are anticipated to be completed by 2032. The impacts arising as a result of these works would continue, as identified above.
- 18.9.31 Works to the Longbridge Roundabout are anticipated to take place between 2030 and 2032. These may impact an approximate area of 0.1 hectares on the southern part of areas of public open space (St Bartholomew's Church and the former Horley Anderson Centre and Playing Fields) to the north of the A23 and east of the River Mole.
- 18.9.32 To mitigate for these impacts the following measures have been incorporated into the Project design, in addition to those identified above.
- New areas of public open space would be created totalling a minimum of approximately 0.1 hectares (or an area equivalent to the total loss of public open space), with links to the existing area of Riverside Garden Park, St Bartholomew's Church and the former Horley Anderson Centre and Playing Fields, and the residential areas of Horley to the north and east.
- 18.9.33 The sensitivity of the designated open space within St Bartholomew's Church and the former Horley Anderson Centre and Playing Fields is assessed as medium, as it is a well-used resource by the surrounding communities and visitors.
- 18.9.34 The magnitude of the impact on the areas of public open space at St Bartholomew's Church and the former Horley Anderson Centre and Playing Fields is assessed to be low medium term adverse. The loss of land would not adversely affect the integrity of this resource and would be mitigated by the provision of new areas of public open space which would serve the local community, and which would be contiguous with the existing resource. There may be some change to the amenity of the southern areas of the public open space, predominantly as a result

of changes to the visual and acoustic environments both during construction and in operation. Taking these factors into account, the effect on these areas of public open space is assessed to be of long term **minor adverse** significance.

Further Mitigation and Future Monitoring

- 18.9.35 No further mitigation or monitoring measures with regard to recreational or agricultural land use receptors are proposed.

Significance of Effects

- 18.9.36 No further mitigation or monitoring is required. Therefore, the significance of effects would remain as presented for the 2029 – 2032.

2033 - 2038

Agricultural Land Use

- 18.9.37 During this phase, it is anticipated that the temporary areas of agricultural land required in connection with the provision of the new grade-separated junctions as part of the highway improvement works would be restored (as the works on the South Terminal roundabout improvements together with the North Terminal roundabout improvements and Longbridge Roundabout improvements are completed). The implementation of best practice techniques, which would be outlined in the soil management strategy (see Table 18.8.1), would enable these temporary areas to be restored to their former agricultural use as part of Landholdings 1 or 3. Therefore, there would be a no change magnitude of impact and medium sensitivity and therefore significance of effect of **no change** (compared to the baseline situation) in either the agricultural land quality or farming potential of these areas following completion of the restoration period.

Recreation

- 18.9.38 It is anticipated that the South and North Terminal junction improvements and the works to the Longbridge Roundabout would all be completed by 2032 and therefore there would be no further effects on recreational resources arising from the construction works associated with these surface access works. Any changes to the amenity of recreational resources as a result of changes to the visual and acoustic environments are addressed in Chapters 8 and 14 of the PEIR.

Further Mitigation and Future Monitoring

- 18.9.39 No further mitigation or monitoring measures with regard to recreational or agricultural land use receptors are proposed.

Significance of Effects

- 18.9.40 No further mitigation or monitoring is required. Therefore, the significance of effects would remain as presented above.

Design Year: 2038

Agricultural Land Use

- 18.9.41 No further effects on agricultural land use resources are anticipated as a result of the operation of the Project in the Design Year 2038.

Recreation

- 18.9.42 No further effects on recreational resources are anticipated as a result of the operation of the Project in the Design Year 2038.

18.10. Potential Changes to the Assessment as a Result of Climate Change

- 18.10.1 As set out in the Future Baseline section (Section 18.6) above for agricultural land use, in this location where soil wetness is the dominant factor affecting the quality of the land in predominantly clayey soils, conditions are unlikely to be significantly affected by climate change. Therefore, the assessment of effects set out above is unlikely to be affected by climate change.
- 18.10.2 As set out in the Future Baseline section (Section 18.6) above, there are unlikely to be significant changes to the recreational baseline described in this chapter during the period up to 2038 as a result of climatic changes. The trend towards warmer, drier summers may result in greater participation in outdoor recreation but this is not anticipated to result in any changes to the assessment of effects on recreational resources set out in this chapter.

18.11. Cumulative Effects

Zone of Influence

- 18.11.1 The zone of influence (Zol) for agricultural land use and recreation has been identified based on the spatial extent of likely effects. For this topic, the Zol equates to the study area for the assessment of effects on these resources as described in Section 18.4 above, together with any resources that link to them, eg other lengths of the Sussex Border Path not directly affected by the Project.

Screening of Other Developments and Plans

- 18.11.2 The Cumulative Effect Assessment (CEA) (see Chapter 19 Cumulative Effects and Inter-relationships) takes into account the impact associated with the Project together with other developments and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise undertaken as part of the 'CEA short list' of developments (see Appendix 19.4.1). Each development on the CEA long list has been considered on a case by case basis for scoping in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.
- 18.11.3 In undertaking the CEA for the Project, it is important to bear in mind that the likelihood of other developments and plans being constructed varies depending on how far along the planning process they are. For example, relevant developments and plans that are already under construction are likely to contribute to a cumulative impact with the Project (providing impact or spatial pathways exist), whereas developments and plans not yet approved or not yet submitted are less certain to contribute to such an impact, as some may not achieve approval or may not ultimately be built due to other factors. For this reason, all relevant development and plans considered cumulatively alongside the Project have been allocated into 'Tiers', reflecting their current stage within the planning and development process. Appropriate weight is therefore given to each Tier in the decision-making process when considering the potential cumulative impact associated with the Project (eg it may be considered that greater weight can be placed on the Tier 1 assessment relative to Tier 2). Further details of the screening process for the inclusion of

other developments and plans in the short list and a description of the Tiers is provided in Chapter 19: Cumulative Effects and Inter-relationships.

- 18.11.4 The specific developments scoped into the CEA for agricultural land use and recreation and the Tiers into which they have been allocated, are outlined in Table 18.11.1. The developments included as operational in this assessment have been commissioned since the baseline studies for this Project were undertaken and as such were excluded from the baseline assessment. Full details of each of the developments is provided in Appendix 19.4.1.

Table 18.11.1: List of Other Developments and Plans Considered within CEA

Description of Development/Plan	Planning Phase	Distance from the Project (km)	Date of Construction (if applicable)	Overlap with the Project?
Tier 1				
Crawley North East Residential: CR 2016/0858/ARM	Phase 3	1.6	2019-2022	No
Crawley North East Residential: CR 2016/0083/ARM	Phase 2c	2.1	2019-2022	No
Crawley North East Residential: CR 2016/0962/ARM	Phase 3b	2.2	2018-2022	No
Crawley North East: CR 2016/0780/ARM	Not known	2.2	2017-2022	No
Crawley CR/2018/0894/OUT	Not known	1.3	2020 – 2022	No
Reigate and Banstead mixed use development (1510 dwellings) 04/02120/OUT	Not known	5.0	2014 - 2028	Yes
Mid Sussex District Council mixed development: 13/04127/OUTES	Not known	2.7	2016-2022	No
Horsham District Council EIA/20/004 West of Ifield	Not Known	1.5	Not yet known	Not yet known
Tier 3				
Forge Wood	2A, 1A, 1C, 3A	1.6	Not yet known	Not yet known
Horley Business Park: Policy HOR9 of the adopted Reigate & Banstead Development Management Plan 2018-2027	Not yet known	0.4	Not yet known	Not yet known
Crawley Borough Council – Land east of Balcombe Road – “Gatwick Green”	Not yet known	<0.1	Not yet Known	No
Tandridge District Council Local Plan:2033 Draft Policy HSGO1 Land at Plough Road and Redehall Road, Smallfield	Not yet known	3.6	Not yet known	No

Description of Development/Plan	Planning Phase	Distance from the Project (km)	Date of Construction (if applicable)	Overlap with the Project?
Tandridge District Council Local Plan:2033 Draft Policy HSGO3 Land at Plough Road, Smallfield	Not yet known	4.0	Not yet known	No
Future Mole Valley Draft Local Plan Site Allocation SA42 Land West of Reigate Road, Hookwood	Not yet known	0.3	Not yet known	No

Cumulative Effects Assessment

- 18.11.5 A description of the significance of cumulative effects upon agricultural land use and recreational receptors arising from each identified impact is given below.

Initial Construction Phase: 2024-2029

Agricultural Land Use

- 18.11.6 The Tier 1 sites to the North East of Crawley have been previously surveyed in detail by Defra and the results of the survey work (Appendix 18.6.1) identify that the land comprises predominantly lower quality Subgrade 3b land, similar to the areas of land affected by this Project. The Tier 1 residential site in Horsham District comprises approximately 100 hectares of land which has also been classified by Defra to comprise Subgrade 3b land, whilst the Tier 1 sites in Mid-Sussex and Reigate and Banstead comprised a mixture of mainly Subgrade 3b with areas of Subgrade 3a land.
- 18.11.7 The Tier 3 sites at Horley Business Park and Forge Wood, have also been subject to detailed Defra survey (Appendix 18.6.1) and comprise Subgrade 3b land. There is no ALC survey data for the remaining Tier 3 sites. The provisional ALC mapping shows the proposed housing allocations at Smallfield to comprise lower quality Grade 4 land, whilst the sites to the east of Balcombe Road and at Hookwood are shown to comprise Grade 3 land.
- 18.11.8 The quality of the land affected by this Project comprises lower quality Subgrade 3b land and therefore would not contribute to any cumulative loss of the best and most versatile Grades 1, 2 or Subgrade 3a land. Therefore, the Project is not anticipated to contribute to any significant cumulative effect.
- 18.11.9 Whilst the Tier 1 and Tier 3 developments would affect areas of agricultural grassland and limited areas of arable cropping to support mixed farming enterprises, it is not considered that these losses together with those limited areas of grassland affected by the Project would affect agricultural productivity in the local area. Therefore, no significant cumulative effects are considered likely.

Recreation

- 18.11.10 The proposed development of the Horley Business Park, located on land to the west of Balcombe Road, is set out in Policy HOR9 'Horley Strategic Business Park' of the adopted Reigate and Banstead Development Management Plan 2018-2027. Under this policy the site is allocated for a strategic business park of predominantly offices; a complementary range of commercial, retail

and leisure facilities to serve and facilitate the main business use of the site; and at least five hectares of new high quality public open space, including parkland and outdoor sports facilities. Currently there are no details in terms of the timing of this development.

- 18.11.11 The Horley Business Park development will be subject to a number of requirements and considerations including:
- the retention or re-routing of public footpath 362a (Sussex Border Path) across the site to maintain a pedestrian link from Balcombe Road to the footbridge across the railway;
 - upgrading and extension of pedestrian/cycle routes from the Business Park to Horley town centre and Gatwick Airport station; and
 - provision and delivery of the public open space area.
- 18.11.12 Taking these policy requirements into account it is not anticipated that there would be any significant cumulative effects on the Sussex Border Path.

2030-2038

- 18.11.13 No further cumulative effects, other than those set out above, have been identified.

18.12. Inter-Related Effects

- 18.12.1 The assessment of effects on recreational resources set out in this chapter does not include any effects on the amenity of those resources as a result of changes to the visual and acoustic environments at either the construction or operation stages of the project. These are assessed, where relevant, in Chapter 8: Landscape and Visual Resources and 14: Noise and Vibration. A commentary on such effects will be included in the Agricultural Land Use and Recreation chapter of the ES.

18.13. Summary

Agricultural Land Use

Initial Construction Phase 2024-2029

- 18.13.1 During this phase of the Project there would be temporary agricultural land take associated with the start of construction phase for the improvements to the South terminal roundabout. This would affect an area of land immediately to the north of the existing South Terminal roundabout.
- 18.13.2 Within this area there would be a temporary loss of approximately 3.3 hectares of lower quality Subgrade 3b land. The significance of this long term temporary loss of this low quality agricultural land is assessed to be **moderate adverse** which is not considered to be significant.
- 18.13.3 Also associated with these temporary works at South Terminal roundabout, there would also be temporary disruption to a single holding which is let on a short term arrangement for horse grazing and hay production. The long term temporary effect of the loss of this single holding is assessed to be **minor adverse** significance
- 18.13.4 During this phase there would be permanent land take of approximately 13.2 hectares of agricultural land during this period associated with the development of surface parking on Pentagon Field, the provision of the flood compensation area in Museum Field and land required in connection with South Terminal and Longbridge Roundabout highways improvements. The

detailed ALC survey of these areas has shown them to comprise entirely lower quality Subgrade 3b land. The significance of this permanent loss of agricultural land quality is therefore assessed to be **moderate adverse**. Taking into account the amount and quality of the land affected, this is not considered to be a significant loss.

18.13.5 There would also be permanent loss of agricultural land from seven land holdings during this stage. These losses would have effects on three holdings where land is being used for agricultural production, but these enterprises would still be able to continue to operate.

18.13.6 The overall significance of effect arising from the permanent loss of these areas of agricultural grassland from these holdings is therefore assessed to be of **minor adverse** significance.

2030-2038

18.13.7 During this phase, there would no further effects on agricultural land and farm holdings beyond those identified for the 2024 - 2029 period.

Design Year:- 2038

18.13.8 No further effects on agricultural land use resources are anticipated as a result of the operation of the Project in the Design Year 2038.

Recreation

Initial Construction Phase 2024-2029

18.13.9 During the initial construction phase (2024-2029), there is the potential for disruption to access along the Sussex Border Path and public footpaths 367, 367Sy and 368 as a result of the commencement of the new grade separated junction to serve the South Terminal. It is proposed to fence and maintain the Sussex Border Path along its current alignment and, if necessary, temporarily divert the northern part of public footpath 367Sy that falls within the construction compound and that section that currently runs to the south of the M23 Spur. In addition, it is proposed that a number of public access improvements would be implemented to provide health and well-being benefits to the local community and the public generally, including the provision of new circular recreational route around the flood compensation area to the east of Museum Field, with a link to the existing alignment of the Sussex Border Path.

18.13.10 There is also the potential for the disruption to the existing public footpath that runs along the boundary of the Pentagon Field during the construction activities associated with the new surface car parking. It is proposed that this route is maintained along its existing alignment outside the perimeter fencing on the construction site for the safety of pedestrians.

18.13.11 Taking all these factors into account, the temporary effect on public rights of way during construction is assessed to be of **minor adverse** significance, and the overall effect on recreational routes and facilities during operation is assessed to be of permanent **minor beneficial** significance.

18.13.12 The improvement works associated with the proposed new grade separated junction to serve the North Terminal may encroach into the southern fringe of Riverside Garden Park. This would result in permanent loss of approximately 0.75 hectares of public open space within these areas and would impact on a section of the Sussex Border Path to the south of the A23. There would be no change to the alignment of NCR21 within the south eastern corner of Riverside Garden Park

and under the existing A23 during the construction works. However, there is the potential for some changes to the amenity of the route in this location.

18.13.13 To mitigate for these impacts the following measures have been incorporated into the Project design.

- New areas of public open space would be created totalling a minimum of 0.75 hectares or equivalent to the area of public open space lost as a result of the Project.
- A commitment would be given towards improvements/enhancements within Riverside Garden Park.
- A permanent on-airport diversion for the affected section of the Sussex Border Path which would be put in place prior to the commencement of construction works.
- Provision of a pedestrian link between the footway on the northern side of the A23 footway near the Longbridge Roundabout into Riverside Garden Park.
- Provision of an additional pedestrian route linking Riverside Garden Park with the Sussex Border Path to the north of the A23.

18.13.14 Taking these factors into account, the effect on the areas of public open space in Riverside Garden Park, is assessed to be of long term **moderate adverse** significance and significant in terms of the EIA regulations; and the effect on the Sussex Border Path is assessed to be of permanent **minor beneficial** significance.

2030-2032

18.13.15 The North and South Terminal junction improvements which would commence towards the end of the initial construction phase, are anticipated to be completed by 2032. Works to the Longbridge Roundabout are anticipated to take place between 2030 and 2032. These may impact approximately 0.1 hectares of land on the southern area of public open space (St Bartholomew's Church and the former Horley Anderson Centre and Playing Fields) to the north of the A23 and east of the River Mole.

18.13.16 To mitigate for these impacts the following measures have been incorporated into the Project design, in addition to those identified above.

- New areas of public open space would be created totalling a minimum of approximately 0.1 hectares (or an area equivalent to the total loss of public open space), with links to the existing area of Riverside Garden Park, St Bartholomew's Church and the former Horley Anderson Centre and Playing Fields, and the residential areas of Horley to the north and east.

18.13.17 Taking these factors into account, the effect on these areas of public open space is assessed to be of long term **minor adverse** significance.

2033-2038

18.13.18 No further effects on recreational resources are anticipated as a result of the ongoing construction and operation of the project in the period 2033-2038.

Design Year 2038

- 18.13.19 No further effects on recreational resources are anticipated as a result of the operation of the project in Design Year 2038.

Next Steps

- 18.13.20 Following the confirmation of the surface access solutions in relation to the new grade separated junction to serve the North Terminal, the package of mitigation measures to be incorporated into the Project will be developed and informed by ongoing consultation with the relevant local authorities and other stakeholders.

Table 18.13.1: Summary of Effects

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
Construction Phase 2024-2029							
Agricultural Land Quality	Medium	Loss of agricultural land required permanently for Project	Permanent	Medium	Moderate Adverse	Not Significant	Not considered to be significant, as no best and most versatile land resource (Grades 1, 2 or 3a land) is affected.
Agricultural Land Quality	Medium	Loss of agricultural land required temporarily for Project	Long term temporary	Medium	Moderate Adverse	Not Significant	Not considered to be significant in terms of the EIA Regulations, as no best and most versatile land resource (Grades 1, 2 or 3a land) is affected.
Farm Holdings	Medium	Loss of land from farm holdings required permanently for Project	Permanent	Low	Minor Adverse	Not Significant	
Farm Holdings	Medium	Loss of land from farm holdings required temporarily for Project	Long term temporary	Low	Minor Adverse	Not Significant	
Public rights of way & Sussex Border Path	Medium	Temporary diversion or disruption	Medium term	Low	Minor Adverse	Not Significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
Provision of new route (Museum Field)	Medium	Permanent provision	Permanent	Low	Minor Beneficial	Not Significant	
Riverside Garden Park	Medium	Loss of approx. 0.75 hectares of public open space and provision of replacement land	Long Term	Medium	Moderate Adverse	Significant	
2030-2032							
Agricultural Land Quality	N/A	No additional effects	N/A	N/A	N/A	N/A	
Farm Holdings	N/A	No additional effects	N/A	N/A	N/A	N/A	
Public rights of way & Sussex Border Path	Medium	Temporary diversion or disruption	Medium term	Low	Minor Adverse	Not Significant	
Public open space at St Bartholomew's Church, Former Horley Anderson Centre & Playing Fields	Medium	Loss of approx. 0.1 hectares of public open space and provision of replacement land	Long term	Low	Minor Adverse	Not significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
2033-2038							
Agricultural land quality	Medium	Restoration of land temporarily affected by use as compounds	Permanent	No change	No change	Not significant	No change compared to baseline conditions (ie reversal of previous temporary adverse effect)
Farm Holdings	Medium			No change	No change	Not significant	
Design Year: 2038							
No further effects							

18.14. References

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18.15. Glossary

Term	Description
ALC	Agricultural Land Classification
BGS	British Geological Survey
BMV	Best and Most Versatile
CEA	Cumulative Effects Assessment
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
ES	Environmental Statement
GAL	Gatwick Airport Limited
MAFF	Ministry of Agriculture, Fisheries and Food
NCR	National Cycle Route
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
NPS	National Policy Statement
PEIR	Preliminary Environmental Information Report
ZoI	Zone of Influence