Gatwick Airport Northern Runway Project

Environmental Statement
Appendix 13.3.1: Summary of Stakeholder Scoping Responses – Air Quality

Book 5

VERSION: 1.0

DATE: JULY 2023

Application Document Ref: 5.3

PINS Reference Number: TR020005

APFP Regulations 5(2)(a) **Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009**

Table of Contents

1 Introduction 1

2 Summary of Stakeholder Scoping Responses for Air Quality 1

3 References 45

4 Glossary 45

Tables

Table 2.1.1: Summary of Stakeholder Scoping Responses 1
Table 4.1.1: Glossary of Terms 45

1 Introduction

1.1.1 This document forms Appendix 13.3.1 of the Environmental Statement (ES) prepared on behalf of Gatwick Airport Limited (GAL) for the proposal to make best use of Gatwick Airport's existing runways and infrastructure (referred to within this report as 'the Project').

1.1.2 This document provides the summary of stakeholder scoping responses for air quality for the Project together with how they have been taken into account in the ES. The scoping responses from PINS are identified in **ES Chapter 13: Air Quality** (Doc Ref.5.1).

2 Summary of Stakeholder Scoping Responses for Air Quality

2.1.1 Any paragraph references made by the Stakeholders in Table 2.1.1 are in relation to the Scoping Report and are responded to in this ES.

Table 2.1.1: Summary of Stakeholder Scoping Responses

Consultee	Date	Details	How/where taken into account in ES
Charlwood Parish Council	30 October 2019	We believe there must be a specific, quantified, assessment of the health impacts on people under flight paths who would suffer the effects of significant increases in aircraft numbers. We also believe there needs to be a thorough assessment of the health effects of expansion on air quality taking account of the additional traffic forecast to be generated.	A detailed air quality assessment has been undertaken for the ES, taking into account predicted increases in aircraft numbers and traffic forecast and details of the methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Crawley Borough Council	30 September 2019	The requirements of the National Emission Ceilings (NEC) Regulations should be considered (para 7.7.1). These requirements should be reported within the ES to demonstrate that the development will not affect CBC's ability to comply with its legal obligations during both the construction and operational phases of the proposed development.	The emissions of NO_x, PM_{10} and $PM_{2.5}$ related to the airport have been calculated using the methodology in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3). A summary of impacts from the emissions calculated has been provided in **ES Chapter 13: Air Quality** (Doc Ref.5.1). The air quality assessment has indicated that there are no significant effects as a result of the Project and the Project is not predicted to impact compliance with the air quality standards. The Project has taken into account the related principles of reducing emissions where feasible in the mitigation outlined in Section 13.9.
Crawley Borough Council	30 September 2019	Para 7.7.27 states that the study area for emissions from construction traffic will be based on the routes assessed within the ADMS-Roads [Atmospheric Dispersion Modelling System] dispersion model. Due to the size and duration of the construction phase, as well as uncertainty of future baseline projections, CBC [Crawley Borough Council] would expect the ES assessment process to follow a conservative approach and precautionary study area. This is particularly relevant in areas within or adjacent to [AQMAs [Air Quality Management Areas], or where temporary traffic management schemes will displace traffic onto roads where concentrations are approaching the air quality objectives and where small deteriorations may have significant impact.	All sensitive receptors and AQMAs were examined in the air quality assessment for the ES. The study area for emissions from construction traffic has been defined by the availability of transport information screened for changes in traffic flows using the Environmental Protection UK (EPUK)/The Institute of Air Quality Management (IAQM) guidance criteria (IAQM, 2017). The more stringent AQMA screening criteria in the guidance were used where appropriate in the study area for both the operational and construction scenarios. A conservative approach is taken by assessing all roads within the 11 x 10 km domain centered on the airport to include roads and airport sources within the vicinity of the airport. In addition, a conservative approach is taken by assessing the worst-case year for each construction period. Details of the methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).

Consultee	Date	Details	How/where taken into account in ES
Crawley Borough Council	30 September 2019	The study area for the operational phase focuses on the affected road network based on changes to road traffic during operation. Although current committed and planned development would be included in the traffic growth figures, the uncertainty about the scale and location of future growth in the wider area and associated with the proposed development means that traffic forecasts may considerably underestimate the changes and consequently the modelled air quality impacts. The Project would result in 3,000 on-airport jobs and many more indirectly employed and these commuters are considered to have a disproportionate effect on the local transport network. CBC would therefore expect to see a precautionary approach with a range of potential future growth scenarios reflecting traffic volumes that are consistent with future economic and housing growth. This is important to check that the cost-benefit evaluation of the Project is not skewed in favour of economic growth at the expense of environmental impacts.	Throughout the assessment reasonable worst-case assumptions and suitable data have been used to address the uncertainties providing a robust, conservative approach to the ES. Details of the assumptions and limitations are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3). The transport figures in **ES Chapter 12: Traffic and Transport** (Doc Ref.5.1) include future growth assumptions agreed with the local planning authorities. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Crawley Borough Council	30 September 2019	The roads in and around the AQMA provide the main routes into the Manor Royal Business District and commuter routes into Gatwick for local airport staff. Many of the businesses on Manor Royal are airport related and will see an increase in airport generated road traffic due to the development during the operational phase. The mineral and aggregate industries located within the business district (Gatwick Road) are also likely to see an increase in HGV [Heavy Goods Vehicle] movements during the construction phase. The ES should provide a detailed assessment of the air quality impacts of this traffic on the AQMA.	The air quality assessment for the ES has included all routes likely to be used by construction traffic around the airport, and any roads affected during operation. Pollutant concentrations have been predicted at discrete receptors in the AQMAs and the wider study area. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Crawley Borough Council	30 September 2019	The EIASR fails to acknowledge the emergence of airports as a significant source of ultrafine particulate pollution in the past eight years and that Gatwick is no exception to this. While at this stage it would be impractical to expect the airport to model any such impact, it should recognise in its submission documents that a potential issue does exist, and that to help mitigate any potential future risk from this pollutant that it will undertake long term monitoring to 2039 as a minimum, examining both particle number and the particle size distribution at a representative residential site downwind of the airport. This need for ultrafine particle monitoring in the vicinity of airports is in line with the recommendations of the Government's air quality expert group (AQEG), and the Government's draft aviation strategy.	It is agreed that it is not possible to practically model these impacts although ultrafine particles are included within the fine particulate matter ($PM_{2.5}$) fraction which is modelled and mitigated where necessary. Ultrafine particulate matter (UFP), also known as $PM_{0.1}$, as it is less than 0.1µm has been taken into consideration in the health assessment **ES Chapter 18: Health and Wellbeing** (Doc Ref.5.1). A commitment to engage with UK wide airport UFP monitoring studies has been included in the assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1). .
Crawley Borough Council	30 September 2019	Paragraphs 7.7.32 and 7.7.33 set out the proposed air quality model verification. Pollutant concentrations for each scenario year (2018, 2026, 2029, and 2038) will be predicted using the ADMS-Airport dispersion model. CBC request that the specific receptor sites modelled in Crawley should be agreed with the Council and as a minimum, should include sites used in previous (2015) air quality assessments of the airport, so that the work is comparable. Modelling outcomes in previous air quality assessments of the airport, have consistently under-estimated roadside pollutant concentrations by significant amounts at receptor sites in Crawley. If predicted results from the model differ significantly from measured concentrations, it is requested that a choice of suitable additional sites for model verification should be agreed with CBC.	The air quality assessment contains receptor sites included in previous assessments of the airport. Receptor sites have been agreed with each relevant local authority. Zonal adjustment factors have been derived for the model verification to take into account local regions within the wider study area. The process of model verification is to address any over or underprediction of the model and this was undertaken in line with the Department of Environment, Food and Rural Affairs (Defra) Technical Guidance (TG22) (Defra, 2022). Further details of the model verification can be found in **ES Appendix 13.6.1: Air quality data and model verification** (Doc Ref.5.3).
Crawley Borough Council	30 September 2019	CBC welcomes Gatwick's commitment to produce a detailed emissions inventory for airport ground sources as well as LTO [Landing and Take-off] aircraft emissions and on/off airport traffic emissions (para 7.7.28). The data should be presented within the ES in a source apportionment format to indicate the airport contribution compared to non-airport contribution.	**ES Chapter 13: Air Quality** (Doc Ref.5.1) includes a source apportionment of predicted pollutant emissions for the main sources, such as aircraft in the air, aircraft on ground, airport activities, car parks, airport related and non-airport related road traffic. The results of the emissions inventories for each year are provided in **ES Appendix**

Consultee	Date	Details	How/where taken into account in ES
			13.9.1: Air Quality Results Tables and Figures P1-2 and P4-6 (Doc Ref.5.3).
Crawley Borough Council	30 September 2019	CBC have concerns that uncertainties about future growth associated with the Project and the potential air quality impacts of cumulative developments may contribute to a “creeping baseline” in emissions that may go unrecognised. This is because even major developments are often shown as not having a significant air quality impact based on their predicted concentrations. To address this the proposed ES scoping methodology should make reference to the Air Quality and Emissions Mitigation Guidance for Sussex.	The Sussex Guidance has been given due regard in the assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1) and in commitments made to mitigation of air quality impacts in Section 13.9 of **ES Chapter 13: Air Quality** (Doc Ref.5.1). However, the specific mitigation requirements from the Sussex Guidance have not been applied because there is no requirement or justification for doing so under the ANPS and NNNPS. The underlying rationale of the Sussex Guidance is to seek the mitigation of residual NO_x and $PM_{2.5}$ emissions. Actions to improve air quality in future are included in the CAP (**ES Appendix 5.4.2: Carbon Action Plan** (Doc Ref.5.3)) and **ES Appendix 5.4.1: Surface Access Commitments** (Doc Ref.5.3). The assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1). details commitments made to mitigate air quality impacts following best practice and will reduce impacts, even at locations where the current legislated standards are not predicted to be exceeded. The air quality assessment has indicated that there are no significant effects as a result of the Project and the Project is not predicted to impact compliance with the air quality standards. This approach is considered consistent with the principles and guidance set out in the Sussex Guidance; it follows requirements for EIA and NPSs; and provides detailed commitments for suitable mitigation to be secured through the Development Consent Order (DCO).
Crawley Borough Council	30 September 2019	The proposed ES scoping methodology should make reference to the Air Quality and Mitigation Guidance for Sussex.	The assessment in Section 13.9 of **ES Chapter 13: Air Quality** (Doc Ref.5.1). details commitments made to mitigate air quality impacts following best practice. This approach is considered consistent with the principles and guidance set out in the Sussex Guidance; it follows requirements for EIA and NPSs; and provides detailed commitments for suitable mitigation to be secured through the DCO.
Crawley Borough Council	30 September 2019	CBC consider the approach in the EIASR (para 7.7.38) for assessment of odour is too simplistic to adequately assess the odour impacts from the airport operations. Odour around the airport at residential locations tends to	Records of odour complaints were obtained from GAL's air quality team and local authorities for the last 5 years and a qualitative

Consultee	Date	Details	How/where taken into account in ES
		be described as having a distinctive smell of “aviation fuel”. The IAQM guidance advises that best practice is to use a multi-tool approach where practicable, which may include screening, sampling and dispersion modelling. This approach would be more appropriate for this ES assessment in identifying locations where odour is most likely to be detected and inform suitable mitigation.	assessment has been included in the ES. As the IAQM guidance notes, modelling is not always the preferred approach and “*it should always be considered in an odour assessment that there are some types of odour source that may exist that are not easily modelled (eg diffuse sources, fugitive emissions or intermittent sources)”* (IAQM, 2018). Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Crawley Borough Council	30 September 2019	The ES should include and address any odour or other emissions from the proposed Central Area Recycling Enclosure [CARE] centre and water treatment facilities.	Records of odour complaints were obtained from GAL's air quality team and local authorities for the last 5 years and a qualitative assessment of the CARE facility and water treatment works has been included in the ES. Emissions from the CARE facility have been included to assess potential impacts, as stated in **ES Chapter 13: Air Quality** (Doc Ref.5.1). No changes are proposed to the Crawley Sewage Treatment Works as part of the Project and therefore no new odour assessment is required. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Epsom and Ewell Borough Council	27 September 2019	Proposed scope of the air quality assessment is agreed. Epsom and Ewell have declared an AQMA in respect to emissions from road transport. The environmental impact assessment needs to take into account potential impacts, and harm from the proposal particularly in view of the Borough’s significant housing requirement.	All areas of interest, sensitive receptors and AQMAs were examined and have been taken into account in the air quality assessment in the ES. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Highways England	1 October 2019	Traffic and environmental impact arising from changes to the SRN [Strategic Road Network], the increase/re-routing of traffic post-opening (including phased opening) of the proposed development, during construction, traffic volume (including cumulative effects), composition or routing change and transport infrastructure modification should be fully assessed and reported. Adverse changes to noise and air quality should be particularly considered, including in relation to compliance with the European air quality limit values and/or in local authority designated Air Quality Management Areas (AQMAs).	All areas of interest, sensitive receptors and AQMAs were examined and have been taken into account in the air quality assessment in the ES. The ES also includes an assessment of compliance with limit values. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Horley Town Council	25 September 2019	Careful consideration needs to be given to the impact from the regular use of the Northern Runway on the residents living in the southern part of Horley adjacent to the airport boundary. This is because it is much closer to residences than the main runway; particularly as its centre line which is 210 m closer than the main runway. Our concerns centre around noise & air quality.	Sensitive receptors have been modelled close to the edge of the airport and along the main roads around the airport, including residential properties in Horley adjacent to the airport boundary. Details of sensitive receptors included in the detailed air quality assessment are provided in **ES Appendix 13.6.2: Air Quality Receptors** (Doc Ref.5.3).
Horley Town Council	25 September 2019	The impact of noise and air quality from the increase in the number of movements and the fact that the peak will now be spread across a greater part of the day than presently; as airlines fill up the current spare capacity in the shoulder periods.	The air quality assessment takes into account the additional aircraft and temporal spread of traffic movements associated with the Project. Details of the air quality assessment methodology are included in **ES**

Consultee	Date	Details	How/where taken into account in ES
			Appendix 13.4.1: Air Quality Assessment Methodology (Doc Ref.5.3).
Horsham District Council	27 September 2019	In the event that the Heathrow third runway cannot be delivered in 2026, the opening year of 2030 will be modelled. The Study should allow for consideration of new information which may emerge over this period, for example, improvements in road traffic emissions, but nevertheless consider that it will be important to consider the worst case scenario. The Council would also wish to see the distinction between airport-related and non-airport-related road traffic.	The ES has been based on the most likely scenarios at the time of the assessment and includes a breakdown of airport and non-airport related road vehicles emissions in **ES Chapter 13: Air Quality** (Doc Ref.5.1). The ES is based on a no Heathrow third runway scenario. Whilst not assessing a Heathrow third runway, it is being considered separately and qualitatively for the cumulative assessment (see **ES Chapter 20: Cumulative Effects and Inter-related Effects** Doc Ref.5.1). Throughout the assessment reasonable worst-case assumptions have been made to address the uncertainties providing a robust, conservative approach. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3). Data and model files have been provided to the local authorities along with the ES, as discussed and agreed at the TWG meetings. The files will include a distinction between airport-related and non-airport-related road traffic.
Horsham District Council	27 September 2019	It is strongly recommended that the applicant has regard to the Air Quality and Emissions Mitigation Guidance for Sussex (2019) in assessing air quality impacts. The guidance takes a low-emissions strategies' approach to avoiding cumulative impacts of new development, by seeking to mitigate or offset emissions from the additional traffic. In accordance with the guidance, a damage cost calculation is required from all 'Major' developments. Applicants are required to submit a mitigation plan detailing proposed measures to mitigate and/or offset the impacts. The estimated value of the proposed measures should be equal to the environmental damage costs.	Cumulative assessments have been undertaken for air quality as part of the ES. Details of the air quality assessment methodology are included in **ES Chapter 13: Air Quality** (Doc Ref.5.1). and **ES Appendix 13.4.1 Air Quality Assessment Methodology** (Doc Ref.5.3). The Project is NSIP under the Planning Act 2008 (UK Government, 2008). The assessment of effects is in accordance with the corresponding Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (UK Government, 2017) and the ANPS and NNNPS applicable to such a scale/type of project. The Sussex Guidance has been given due regard in the assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1). However, the specific damage cost calculation and mitigation requirements from the Sussex Guidance have not been applied because there is no requirement or justification for doing so under the ANPS and NNNPS. It is recognised that the Sussex Guidance requires an assessment of transport emissions associated with the Project. The air quality assessment for the ES has included all routes likely to be used by construction traffic around the airport, and any roads affected during operation. Pollutant concentrations have been predicted at discrete

Consultee	Date	Details	How/where taken into account in ES
			receptors in the AQMAs and the wider study area. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3). The air quality assessment has indicated that there are no significant effects as a result of the Project and the Project is not predicted to impact compliance with the air quality standards. The underlying rationale of the Sussex Guidance is to seek the mitigation of NO_x and $PM_{2.5}$. This has been considered in the assessment in Section 13.9 of **ES Chapter 13: Air Quality** (Doc Ref.5.1) which details commitments made to mitigate air quality impacts following best practice. Actions being taken to reduce impacts to air quality from surface access are also included in the **ES Appendix 5.4.1: Surface Access Commitments** (Doc Ref.5.3). This approach is considered consistent with the principles and guidance set out in the Sussex Guidance; it follows requirements for EIA and NPSs; and provides detailed commitments for suitable mitigation to be secured through the DCO.
Horsham District Council	27 September 2019	The proposed modelling will be using a 10 x 11 km grid, yet in previous studies a 10 x 10 km grid has been used and historically a 10 x 8 km grid has been used. This makes comparison of the ratio of airport to non-airport car traffic emissions impossible. The data regarding emissions from road vehicles must separate out airport-related traffic from non-airport related traffic.	The 11 km by 10 km domain has been used to provide contour plots of predicted concentrations (ES Figure 13.1.1, to 13.1.9). It does not limit or define the extent of the emissions calculations. All roads are included in the air quality model within this 11 km by 10 km domain, and traffic screening using the IAQM/EPUK criteria has been undertaken outside this domain to define the relevant wider study area for each scenario. The road traffic emissions have been presented as airport and non-airport related in **ES Chapter 13: Air Quality** (Doc Ref.5.1) of the ES. The Planning Inspectorate (PINS) stated in their scoping opinion that PINS "*agrees that the study area is not appropriately defined by an 'arbitrary limit' and instead should be defined by the area over which significant air quality effects could arise*". This approach has been taken for this assessment. The scoping opinion from PINS is summarised in **ES Chapter 13: Air Quality** (Doc Ref.5.1) Air Quality. The results of the emissions inventories for each year are provided in **ES Chapter 13: Air Quality** (Doc Ref.5.1). .
Horsham District Council	27 September 2019	The Council expects that the impacts of additional traffic on town centres in Horsham District, including Horsham, Cowfold, Henfield and Storrington are included in the assessment as the increase in housing, associated employment as well as passenger numbers travelling to the airport is envisaged will have an impact	All sensitive receptors and AQMAs were examined in the air quality assessment for the ES. All roads within the 11 km by 10 km domain were modelled with the additional traffic extent defined by changes in traffic flows screened using the IAQM/EPUK criteria to identify areas

Consultee	Date	Details	How/where taken into account in ES
		on traffic flows and air quality in the district. In addition, we suggest the Study should include monitoring of ultrafine particles.	for detailed modelling. The transport figures include future growth assumptions agreed with the local planning authorities. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3). Ultrafine particulate matter (UFP) has been taken into consideration in the health assessment **ES Chapter 18: Health and Wellbeing** (Doc Ref.5.1). A commitment to engage with UK wide airport UFP monitoring studies has been included in the assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1). .
Horsham District Council	27 September 2019	There is an ongoing issue with unrealistic emission rates being used for diesel vehicles. The issue is more significant with modelling concentrations for future years. Therefore, a sensitivity analysis must be carried out when assessing future years. It is recommended that future year emissions are held constant (at the baseline level or an alternative agreed level) or that alternative emission rates are used for diesels, for example, the Air Quality Consultants 'Calculator Using Realistic Emissions for Diesels' (CURED) V3A.	The emissions factors toolkit (EFT) developed by Defra has since been updated to account for these emission rates mentioned. The air quality assessment has been based on latest available tools by Defra. Air Quality Consultants now acknowledge that the CURED model is no longer appropriate as the Defra EFT is now considered representative of actual emissions (Air Quality Consultants, 2020). Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Horsham District Council	27 September 2019	The proposal to scope out pollutants other than oxides of nitrogen [NO_x], nitrogen dioxide [NO_2], PM_{10} and $PM_{2.5}$ is not supported because it is not only road and air traffic that are relevant. This list should be expanded to include consideration of the emissions from the stack of the CARE energy-from-waste facility.	The pollutants assessed in the ES have been expanded to take into account all pollutants which could result in a significant impact, including those from the CARE facility. Details of the pollutants assessed is provided in **ES Chapter 13: Air Quality** (Doc Ref.5.1).
Mid Sussex District Council	1 October 2019	What year of emission factors are to be used for each modelling year?	Emissions factors have been used for the year of each assessment scenario for 2018 and 2029, and non-London traffic in 2032, 2038 and 2047. For 2032, 2038 and 2047 London traffic, 2030 emission factors were used as this is the latest available year. Details of the emissions factors and selection of year are provided in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Mid Sussex District Council	1 October 2019	What year of background concentration are to be used for each modelling year?	Background concentration for the year of each assessment scenario have been used, with the exception of the 2032 and 2047 scenario. For the ES assessment, 2030 backgrounds have been used for these scenarios, as this is the latest year provided in the Defra predictions. This represents a conservative assumption as background concentrations would be expected to improve after 2030. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Mid Sussex District Council	1 October 2019	Further justification that there will be no emissions of odour from excavation of soil is required.	An odour assessment for the construction period was screened out in the ES as no odorous materials are expected to be excavated. Should significant sources of odours be encountered during excavation, effects from odour would be mitigated following best practice industry guidance as detailed in **ES Appendix 13.8.1: Air Quality Construction Period Mitigation** (Doc Ref.5.3).

Consultee	Date	Details	How/where taken into account in ES
Mid Sussex District Council	1 October 2019	Further information about the methodology to be used to determine the mitigation measures that will be required.	The mitigation measures proposed are based on the level of impact predicted, typical good practice for major developments and the availability of suitable measures. Construction mitigation measures are based on the recommendations of the IAQM guidance (IAQM, 2014). The assessment in Section 13.9 of **ES Chapter 13: Air Quality** (Doc Ref.5.1). details commitments made to mitigate air quality impacts following best practice.
Mid Sussex District Council	1 October 2019	What point of the construction phase is to be assessed?	For the construction dust assessment, all construction elements have been assessed. For the assessment of construction traffic emissions, the peak construction traffic flows were modelled using emissions and backgrounds from the first full year of airfield construction (2024) and highways construction (2029). Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Mid Sussex District Council	1 October 2019	The Air Quality and Emissions Mitigation Guidance for Sussex (2019) should be included as a key document for the assessment	The Project is a NSIP under the 2008 Planning Act (UK Government, 2008). The assessment of effects is in accordance with the corresponding Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (UK Government, 2017) and the ANPS and NNNPS applicable to such a scale/type of project. The air quality assessment has indicated that there are no significant effects as a result of the Project and the Project is not predicted to impact compliance with the air quality standards. The assessment in Section 13.9 of **ES Chapter 13: Air Quality** (Doc Ref.5.1). details commitments made to mitigate air quality impacts following best practice. This approach is considered consistent with the principles and guidance set out in the Sussex Guidance; it follows requirements for EIA and NPSs; and provides detailed commitments for suitable mitigation to be secured through the DCO.
Mid Sussex District Council	1 October 2019	Following Sussex and Defra Guidance, a damage cost calculation should be undertaken to inform the mitigation measures.	The Project is a NSIP under the Planning Act 2008 (UK Government, 2008). The assessment of effects is in accordance with the corresponding Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (UK Government, 2017) and the ANPS and NNNPS applicable to such a scale/type of project. The Sussex Guidance has been given due regard in the assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1). **ES Chapter 13: Air Quality** (Doc Ref.5.1) details commitments made to mitigate air quality impacts. However, the specific damage cost calculation requirements from the

Consultee	Date	Details	How/where taken into account in ES
			Sussex Guidance have not been applied because there is no requirement or justification for doing so under the ANPS and NNNPS. It is recognised that the Sussex Guidance requires an assessment of transport emissions associated with the Project. The air quality assessment for the ES has included all routes likely to be used by construction traffic around the airport, and any roads affected during operation. Pollutant concentrations have been predicted at discrete receptors in the AQMAs and the wider study area. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3). The air quality assessment has indicated that there are no significant effects as a result of the Project and the Project is not predicted to impact compliance with the air quality standards. The underlying rationale of the Sussex Guidance is to seek the mitigation of NO_x and $PM_{2.5}$. The assessment in Section 13.9 of **ES Chapter 13: Air Quality** (Doc Ref.5.1). details commitments made to mitigate air quality impacts following best practice. Actions being taken to reduce impacts to air quality from surface access are also included in the **ES Appendix 5.4.1: Surface Access Commitments** (Doc Ref.5.3). This approach is considered consistent with the principles and guidance set out in the Sussex Guidance; it follows requirements for EIA and NPSs; and provides detailed commitments for suitable mitigation to be secured through the DCO.
Mid Sussex District Council	1 October 2019	Operational traffic impacts should be screened for the other AQMAs in Reigate and Banstead. Particularly the one along the M25, which could potentially see an increase in traffic.	All areas of interest, sensitive receptors and AQMAs were examined as part of the ES. All traffic data provided for the assessment has been screened against the EPUK/IAQM guidance screening criteria with any traffic exceeding the criteria being modelled (IAQM, 2017). Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Mole Valley District Council	30 September 2019	Paragraph 7.7.21 – Pollutant concentration predictions must also consider and reflect the impact of the proposed replacement CARE facility.	The pollutants assessed in the ES have been expanded to take into account all pollutants which could result in a significant impact, including those from the CARE facility. Details of the pollutants assessed is provided in **ES Chapter 13: Air Quality** (Doc Ref.5.1). Table 13.2.1.

Consultee	Date	Details	How/where taken into account in ES
Mole Valley District Council	30 September 2019	Paragraph 7.7.24 – Air quality assessments should include direct links to the Health Impact Assessment, in order to understand the likely impacts on residents of any change to air quality surrounding the airport.	The results of the air quality assessment have been used as input to the health assessment (**ES Chapter 18: Health and Wellbeing** (Doc Ref.5.1)).
Mole Valley District Council	30 September 2019	Paragraph 7.7.30 – Air quality assessments should clearly outline the split between emissions from airport related road traffic, and non-airport related traffic.	The air quality assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1). of the ES includes a breakdown of airport and non-airport related road vehicle emissions. The results of the emissions inventories for each year are provided in **ES Chapter 13: Air Quality** (Doc Ref.5.1).
Mole Valley District Council	30 September 2019	Paragraph 7.7.40 – The proposal to scope out pollutants other than NO_x, NO_2, PM_{10} and $PM_{2\,5}$ is not supported, as the effects of any emissions from the replacement CARE facility should be assessed. The Applicant should also commit to monitoring of ultrafine particles around the airport in the future.	The pollutants assessed in the ES have been expanded to take into account all pollutants which could result in a significant impact, including those from the CARE facility. Details of the pollutants assessed is provided in **ES Chapter 13: Air Quality** (Doc Ref.5.1). Ultrafine particulate matter (UFP) have been taken into consideration in the health assessment **ES Chapter 18: Health and Wellbeing** (Doc Ref.5.1). A commitment to engage with UK wide airport UFP monitoring studies has been included in the assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1).
Mole Valley District Council	30 September 2019	Paragraph 7.9.8 – The Government's commitment to achieving an emissions' reduction target of 100% by 2050, as set out in the Climate Change Act 2008 (2050 Target Amendment) Order 2019, should be considered.	This is considered in the climate change assessment (**ES Chapter 15: Climate Change and ES Chapter 16: Greenhouse Gases** (Doc Ref.5.1)).
Public Health England	30 September 2019	Our position is that pollutants associated with road traffic and combustion eg airplane engines or movements, particularly particulate matter and oxides of nitrogen are non-threshold; ie, an exposed population is likely to be subject to potential harm at any level and that reducing public exposures of non-threshold pollutants (such as particulate matter and nitrogen dioxide) below air quality standards will have potential public health benefits. We support approaches which minimize or mitigate public exposure to non-threshold air pollutants, address inequalities (in exposure), and maximise co-benefits (such as physical exercise). We encourage their consideration during development design, environmental and health impact assessment, and development consent.	The assessment in Section 13.9 of **ES Chapter 13: Air Quality** (Doc Ref.5.1). details commitments made to mitigate air quality impacts following best practice.
Reigate and Banstead Borough Council	27 September 2019	Following the adoption of the DMP [Development Management Plan] on 26th September 2019, references to the "emerging Reigate & Banstead Borough Development Management Plan 2018-2027" should be amended to "Reigate and Banstead Development Management Plan (Reigate and Banstead Borough Council, 2019)" to ensure consistency with other adopted Local Plan documents.	This has been included in the ES (**ES Appendix 13.2.1: Summary of Local Planning Policy – Air Quality**) (Doc Ref.5.3).
Reigate and Banstead Borough Council	27 September 2019	The policy and legislative context for air quality needs to also include Surrey County Council's Electric Vehicle Strategy and Low Emission Strategy.	This has been included in the ES (**ES Appendix 13.2.1: Summary of Local Planning Policy – Air Quality**) (Doc Ref.5.3).
Reigate and Banstead Borough Council	27 September 2019	The Council considers that the scope of the assessment should include air quality impacts of airport generated road traffic on the A23 Hooley Air Quality Management Area (AQMA) given that a significant proportion of the airport's passenger traffic comes from London and is likely to access the airport via the A23/ M23 route out of London.	All areas of interest, sensitive receptors and AQMAs were examined as part of the ES. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).

Consultee	Date	Details	How/where taken into account in ES
Reigate and Banstead Borough Council	27 September 2019	We also consider that for any assessment of air quality as part of the DCO process (regardless of the year under consideration) the scope of the assessment should include the following: i) Isopleth/ contour maps for each of the pollutants under consideration and for each of the assessment scenarios (baseline and with development), 2018, 2026, 2029 and 2038 given the construction of Pier 7 post-2032. ii) A table of concentrations of each pollutant for each assessed year (including 2038) at specific receptors/ points around the airport, which as a minimum includes all receptors used in previous air quality assessments of the airport (so as to ensure that the work is comparable to previous assessments of air quality in relation to the Horley AQMA). iii) For each of the points in (ii) above, a source apportionment breakdown that includes APU [Auxiliary Power Unit] contribution, aircraft ground contribution, aircraft elevated contribution, ground support equipment, carparks, airside vehicles, airport related road traffic, non-airport related road traffic, and the background contribution. The Council considers that it is imperative that the contribution from airport related road traffic and non-airport related road traffic are presented separately. iv) A calculation of the years of life lost (not a relative or percentage change) due to the airport pollution for each of the assessment years under consideration, both with and without the Project in place, using the latest COMEAP [Committee on the Medical Effects of Air Pollutants]) report and DEFRA valuation of a life year lost as this will help interested parties clearly understand the air pollution health costs of the proposed Project.	i) The ES includes contour plots with predicted concentrations for all pollutants and assessment years in the 11 km by 10 km domain (see Figures 13.1.1 to 13.1.9 of the ES). ii) The air quality assessment has included receptors requested by the Council. Predicted pollutant concentrations have been presented in tabular format in the **ES Appendix 13.9.1: Air Quality Results Tables and Figures P1-2 and P4-6** (Doc Ref.5.3). iii) The ES has included a source apportionment of predicted pollutant emissions for the main sources, such as aircraft in the air, aircraft on ground, airport activities (including APU), car parks, airport related and non-airport related road traffic. Predicted pollutant concentrations have been presented in tabular format in the **ES Appendix 13.9.1: Air Quality Results Tables and Figures P1-2 and P4-6** (Doc Ref.5.3). The results of the emissions inventories for each year are provided in **ES Chapter 13: Air Quality** (Doc Ref.5.1). iv) The results from the air quality assessment have been used to inform the health and wellbeing assessment relating to changes in air quality (**ES Chapter 18: Health and Wellbeing**) (Doc Ref.5.1). The method of assessment has been agreed during the health topic working group meetings and is presented in **ES Chapter 18: Health and Wellbeing** (Doc Ref.5.1).
Reigate and Banstead Borough Council	27 September 2019	The Council considers that given GAL's stated sustainability objective of 'improving air quality impacts using new technology, processes and systems', the outputs from points iii) and iv) are particularly important to demonstrate to local residents that the airport is playing its part in reducing air pollution, and not relying on wider societal improvements to mask/ offset increasing pollution from its own estate as has been the case since 2012.	The assessment in Section 13.9 of **ES Chapter 13: Air Quality** (Doc Ref.5.1). details commitments made to mitigate air quality impacts following best practice.
Reigate and Banstead Borough Council	27 September 2019	The Council notes that the EIA Scoping Report fails to acknowledge the emergence of airports as a significant source of ultrafine particulate pollution over the past eight years and that Gatwick is no exception to this. While at this stage it would be impractical to expect the airport to model any such impact, the Council considers that it should recognize in its subsequent submission document that a potential issue does exist, and that to help mitigate any potential future risk from this pollutant that it will undertake long term monitoring to 2039 as a minimum, examining both particle number and the particle size distribution at a representative residential site downwind of the airport. This need for ultrafine particle monitoring in the vicinity of airports is in line with the recommendations of the Government's air quality expert group (AQEG), and the Government's draft aviation strategy.	It is agreed that it is not possible to practically model these impacts although ultrafine particles are included within the fine particulate matter ($PM_{2.5}$) fraction which is modelled and mitigated where necessary. Ultrafine particulate matter (UFP) has been taken into consideration in the health assessment **ES Chapter 18: Health and Wellbeing** (Doc Ref.5.1). A commitment to engage with UK wide airport UFP monitoring studies has been included in the assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1).

Consultee	Date	Details	How/where taken into account in ES
Reigate and Banstead Borough Council	27 September 2019	In order to mitigate against the potential air quality impacts of the proposed Project, and to check that any forecast pollutant concentrations subsequently occur in practice, we expect GAL to continue to fund a programme of long-term monitoring of air pollution (NO_x, PM_{10}, as a minimum) at residential sites downwind of the airport. We would welcome such certainty stated in the ES.	An air quality survey was undertaken between 2016 and 2020 at key areas of concern around the airport, ie along the A23 Brighton Road in Horley and around Hazelwick roundabout in Crawley. Monitoring commitments are intended to be secured under the Section 106 Agreement to be entered in relation to the Project.
West Sussex County Council	27 September 2019	In reference to Paragraph 7.7.30 – The data regarding emissions from road vehicles must separate out airport-related traffic from non-airport related traffic.	The air quality assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1). of the ES includes a breakdown of airport and non-airport related road vehicle emissions. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
West Sussex County Council	27 September 2019	In reference to Paragraph 7.7.32 – The scenarios considered should compare the baseline with the anticipated opening year (2026), as well as 2029, and 2039.	The air quality assessment has been undertaken for future 'with Project' and 'without Project' scenarios and an existing baseline year scenario. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
West Sussex County Council	27 September 2019	In reference to Paragraph 7.7.33 – The grids used for the modelling of air quality must be consistent over time. Air quality modelling for this project will be using a 10km x 11km grid, yet previously (ARUP for 2015) used 10km x 10km, and historically 10km x 8km was used which makes a comparison of ratio of airport to non-airport car traffic emissions from previous work impossible.	The 11 km by 10 km domain has been used to provide contour plots of predicted concentrations (Figure 13.1.1 to 13.1.9). It does not limit or define the extent of the emissions calculations. All roads are included in the air quality model within this 11 km by 10 km domain, and traffic screening using the IAQM/EPUK criteria has been undertaken outside this domain to define the relevant wider study area for each scenario. The road traffic emissions have been presented as airport and non-airport related in the ES. In their scoping opinion, it was stated that PINS "*agrees that the study area is not appropriately defined by an 'arbitrary limit' and instead should be defined by the area over which significant air quality effects could arise*". This approach has been taken for this assessment. The scoping opinion from PINS is included in **ES Chapter 13: Air Quality** (Doc Ref.5.1). The results of the emissions inventories for each year are provided in **ES Chapter 13: Air Quality** (Doc Ref.5.1).
West Sussex County Council	27 September 2019	In reference to Paragraph 7.7.36 – It is understood the assessment will be based on meteorological data from 2018. The data must take into account increased temperatures due to climate change and the resulting increase Auxiliary Power Usage as once above 25C the standard Gatwick Airport Directives (GAD) no longer apply.	An In-combination Climate Change Impacts assessment has been completed for the ES (**ES Chapter 15: Climate**) (Doc Ref.5.1). The airport already has provision for fixed electrical ground power on any new stands to further reduce the use of APU.
West Sussex County Council	27 September 2019	In reference to Paragraph 7.7.39 – The EIA should clearly set out the mitigation proposed to ensure that the CARE facility and WWTW [Wastewater Treatment Work] do not result in odour impacts, or impacts through other emissions to air, on either people or the environment. Consideration of air quality impacts and the mitigation/monitoring required should link closely with the Health Impact Assessment and more general considerations of health.	Records of odour complaints were obtained from GAL's air quality team and local authorities for the last five years and a qualitative assessment of the CARE facility has been included in the ES. No changes are proposed to the Crawley Sewage Treatment Works as part of the Project and therefore no odour assessment is required. Details of the air quality assessment methodology are included in **ES**

Consultee	Date	Details	How/where taken into account in ES
			Appendix 13.4.1: Air Quality Assessment Methodology (Doc Ref.5.3). The results of the air quality assessment have been used as input to the health assessment (**ES Chapter 18: Health and Wellbeing** (Doc Ref.5.1)).
West Sussex County Council	27 September 2019	In reference to Paragraph 7.7.40 – The proposal to scope out pollutants other than NO_x, NO_2, PM_{10} and $PM_{2.5}$ is not supported because it is not only road and air traffic that are relevant. The list should be expanded to include consideration of the emissions from the stack of the CARE energy-from-waste facility, including (subject to EA [Environment Agency] confirmation) sulphur dioxide, total organic carbon, hydrogen chloride, carbon monoxide, cadmium/thallium and their compounds, mercury and its compounds, dioxins/furans, and heavy metals. The list considered in the assessment, and in future monitoring, should also include ultra-fine particles.	The pollutants assessed in the ES has been expanded to take into account all pollutants which could result in a significant impact, including those from the CARE facility. Details of the pollutants assessed is provided in Table 13.2.1 of **ES Chapter 13: Air Quality** (Doc Ref.5.1). A commitment to engage with UK wide airport UFP monitoring studies has been included in the assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1).
Wealden District Council	26 September 2019	The Council consider that all appropriate considerations have been made. However, we would question scoping out '"odours from construction phase'' when the report is uncertain whether odorous materials will be excavated or not as part of building plans. The same principle applies to emissions of other pollutants from aircraft emissions, where the report states that the effects are unlikely to be significant. Whilst it is appreciated that the Defra TG 16 Guidance note does not require the assessment of other pollutants than those listed, there is still ambiguity whether concentrations of these pollutants will exceed their respective air quality standards. It is therefore reasonable to scope this in.	An odour assessment for the construction period was screened out in the ES as no odorous materials are expected to be excavated. Should significant sources of odours be encountered during excavation, effects from odour would be mitigated as provided in Table 13.8.1 of **ES Chapter 13: Air Quality** (Doc Ref.5.1). The pollutants assessed in the ES have been expanded to take into account all pollutants which could result in a significant impact, including those from the CARE facility. Details of the pollutants assessed is provided in Table 13.2.1 of **ES Chapter 13: Air Quality** (Doc Ref.5.1).
Waverley Borough Council	30 September 2019	No air quality measurement sites are located within the Borough or indeed beyond the close confines of the Gatwick Site. Any potential impacts on air quality from aircraft, over a wider area, including Waverley Borough, need to be fully assessed and the methodology for the assessment should take account of this. Additional vehicle movements across the Borough or its fringes as a result of the airports expansion may also have an impact on the air quality within the Borough, this will need to be considered.	A detailed air quality assessment has been undertaken for the ES, taking into account predicted increases in aircraft numbers and traffic forecast. All areas of interest, sensitive receptors and AQMAs were examined as part of the ES. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3). Details of the model verification including the use of Waverly Borough Council monitoring are included in **ES Appendix 13.6.1: Air Quality Data Model Verification** (Doc Ref.5.3).
Transport for London	October 2019	The air quality and noise impacts of traffic and transport should be assessed as part of the EIA within their respective chapters, as indicated by GAL.	A detailed air quality assessment has been undertaken for the ES, including predicted changes in traffic flows. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Tandridge District Council	30 September 2019	As with other areas of impact, the uncertainties around the rate of growth resulting from the Project are such that air quality impacts cannot be accurately assessed.	The assessment has been undertaken following normal EIA guidelines, based on best available information, for assessing the likely significant effects on air quality from the Project. The transport figures include future growth assumptions agreed with the local planning authorities.

Consultee	Date	Details	How/where taken into account in ES
			Throughout the assessment reasonable worst-case assumptions have been made to address the uncertainties providing a robust, conservative approach. Details of the air quality assessment methodology are included in **ES Appendix 13.4.1: Air Quality Assessment Methodology** (Doc Ref.5.3).
Tandridge District Council	30 September 2019	It is noted also that the EIASR does not make reference to emerging evidence in relation to ultra-fine particulate pollution resulting from airports. The potential future risk from this type of pollutant should be addressed in the ES.	It is not possible to practically model these impacts although ultrafine particles are included within the $PM_{2.5}$ fraction which is modelled and mitigated where necessary. Ultrafine particulate matter (UFP) has been taken into consideration in the health assessment **ES Chapter 18: Health and Wellbeing** (Doc Ref.5.1). A commitment to engage with UK wide airport UFP monitoring studies has been included in the assessment in **ES Chapter 13: Air Quality** (Doc Ref.5.1).

3 References

3.1 Legislation

UK Government (2008) Planning Act 2008.

UK Government (2017) The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

3.2 Published Documents

Institute of Air Quality Management (IAQM) (2018) Guidance on the assessment of odour for planning – version 1.1

Department for Environment, Food and Rural Affairs (Defra) (2022) Local Air Quality Management Technical Guidance (TG22).

Greater London Authority (2014) The Control of Dust and Emissions during Construction and Demolition, Supplementary Planning Guidance.

Institute of Air Quality Management (IAQM) (2014) Guidance on the assessment of dust from demolition and construction

Institute of Air Quality Management and Environmental Protection UK (IAQM and EPUK) (2017) Land-use Planning & Development Control: Planning for Air Quality. v1.2

Reigate and Banstead Borough Council (2019) 2019 - 2027 Reigate and Banstead Local Plan: Development Management Plan.

Sussex Air Partnership (2021) Air Quality and Emission Mitigation Guidance for Sussex [Online]. Available at: https://sussex-air.net/wp-content/uploads/2022/09/Sussex-AQ-Guidance-V.1.2-2021.pdf

3.3 Website Sources

Air Quality Consultants (2020) Defra's Emission Factor Toolkit Now Matching Measurements [online source]. Available at: https://www.aqconsultants.co.uk/news/march-2020/defra%E2%80%99s-emission-factor-toolkit-now-matching-measu

4 Glossary

4.1 Glossary of Terms

Table 4.1.1: Glossary of Terms

Term	Description
ADMS	Atmospheric Dispersion Modelling System
APU	Auxiliary Power Unit
AQAP	Air Quality Action Plan
AQEG	Air Quality Expert Group
AQMA	Air Quality Management Area
CARE	Central Area Recycling Enclosure
CBC	Crawley Borough Council
COMEAP	Committee on the Medical Effects of Air Pollutants
CURED	Calculator Using Realistic Emissions for Diesels
DCO	Development Consent Order- Planning consent for Nationally Significant Infrastructure Projects
Defra	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EFT	Emissions Factors Toolkit
EIA	Environmental Impact Assessment
EIASR	Environmental Impact Assessment Scoping Report
EPUK	Environmental Protection UK
ES	Environmental Statement
EU	European Union
GALS	Gatwick Airport Limited – the company which operates Gatwick Airport
HGV	Heavy Goods Vehicle
IAQM	Institute of Air Quality Management
LTO	Landing and Take-off
NEC	National Emission Ceilings
NNNPS	National Policy Statement for National Networks
NO_x	Oxides of nitrogen
NO_2	Nitrogen Dioxide
NPS	National Policy Statement produced by Government
NSIP	Nationally Significant Infrastructure Project. Large scale projects as defined by the 2008 Planning Act
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
$PM_{2.5}$	Airborne particles that have a median diameter of 2.5 microns
PM_{10}	Airborne particles that have a median diameter of 10 microns
RBBC	Reigate and Banstead Borough Council
SRN	Strategic Road Network
UFP	Ultrafine Particle
UK	United Kingdom