



YOUR LONDON AIRPORT
Gatwick

Our northern runway: making best use of Gatwick

Preliminary Environmental Information Report
Appendix 13.3.1: Summary of Stakeholder Scoping Responses - Air Quality
September 2021

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1 Introduction

1.1.1 This document forms Appendix 13.3.1 of the Preliminary Environmental Information Report (PEIR) prepared on behalf of Gatwick Airport Limited (GAL). The PEIR presents the preliminary findings of the Environmental Impact Assessment (EIA) process for the proposal to make best use of Gatwick Airport's existing runways (referred to within this report as 'the Project'). The Project proposes alterations to the existing northern runway which, together with the lifting of the current restrictions on its use, would enable dual runway operations. The Project includes the development of a range of infrastructure and facilities which, with the alterations to the northern runway, would enable the airport passenger and aircraft operations to increase. Further details regarding the components of the Project can be found in the Chapter 5: Project Description.

2 Summary of Stakeholder Scoping Responses for Air Quality

Table 2.1.1: Summary of Stakeholder Scoping Responses

Stakeholders	Date received	Stakeholder Comment	Arup Response
Charlwood Parish Council	30 October 2019	The proposals to assess the health impacts of noise changes quantitatively and qualitatively are insufficiently clear and might not result in the thorough health impact assessment that is required. 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 the additional traffic forecast to be generated.	A detailed air quality assessment has been undertaken for the Preliminary Environmental Information Report (PEIR), taking into account predicted increases in aircraft numbers and traffic forecast. The air quality standards against which the impacts of the Project are assessed are based on the effects the pollutants have on human health. The results of the air quality assessment have been used as input to the health impact assessment.
Crawley Borough Council	30 September 2019	The requirements of the National Emission Ceilings Regulations (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 requirements of the NEC have been considered in the PEIR.
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 dispersion model. Due to the size and duration of the construction phase, as well as uncertainty of future baseline projections, CBC 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, 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 Air Quality Management Areas (AQMA) were examined in the air quality assessment for the PEIR. 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 in addition to all roads in the 11 km by 10 km domain (Moorcroft and Barrowcliffe. et al., 2017). The more stringent AQMA screening criteria in the guidance was used where appropriate in the study area for both the operational and construction scenarios. All routes anticipated to be used by construction traffic have been included in the air quality assessment.
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	Throughout the assessment reasonable worst case assumptions and suitable data have been used to address the uncertainties providing a robust, conservative approach to the PEIR. The transport figures will be updated for the ES and these will include future growth assumptions agreed with the local planning authorities.

Stakeholders	Date received	Stakeholder Comment	Arup Response
		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.	
Crawley Borough Council	30 September 2019	This is acknowledged in para 7.7.9 of the EIASR. 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 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 PEIR has included all routes likely to be used by construction traffic around the airport. Pollutant concentrations have been predicted at discrete receptors in the AQMAs and the wider study area.
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.	We agree that it is not possible to practically model these impacts although ultrafine particles are included within the PM _{2.5} fraction which is modelled. Where any practical assessment methods are available, then these would be considered for the ES.
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 underestimated 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. 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 Defra Technical Guidance (TG16) (Defra, 2021). Further details of the model verification can be found in Appendix 13.6.1.
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 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.	The PEIR has included 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 same level of detail will be included in the ES.
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 Air Quality and Emissions Mitigation Guidance for Sussex will be considered in the ES.
Crawley Borough Council	30 September 2019	The proposed ES scoping methodology should make reference to the Air Quality and Mitigation Guidance for Sussex.	The Air Quality and Emissions Mitigation Guidance for Sussex will be considered in the ES.
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 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.	Records of odour complaints were obtained from Crawley Borough Council and Reigate & Banstead Borough Council for the last 5 years and a qualitative assessment has been included in the PEIR. In the ES, a multi-tool approach using the IAQM odour guidance will be used

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		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.	if deemed necessary. However, as the IAQM guidance notes, modelling is not always the preferred approach and “ <i>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)...</i> ” (Bull <i>et al.</i> , 2018).
Crawley Borough Council	30 September 2019	The ES should include and address any odour or other emissions from the proposed CARE centre and water treatment facilities.	Records of odour complaints were obtained from Crawley Borough Council and Reigate & Banstead Borough Council for the last 5 years and a qualitative assessment included in the PEIR. No changes are proposed to the Crawley Sewage Treatment Works as part of the Project and therefore no detailed air quality assessment is required.
Epsom and Ewell Borough Council	27 September 2019	Proposed scope of the air quality assessment is agreed. Epsom and Ewell has 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 as part of the PEIR and will be for the air quality assessment in the ES.
Highways England	1 October 2019	Traffic and environmental impact arising from changes to the SRN, 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 as part of the PEIR and will be for the air quality assessment in the ES. The ES will also include an assessment of compliance with European Union (EU) limit values.
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. Further details are provided in the PEIR chapter Section 13.4.9 to 13.4.14 with all listed sensitive receptors in Appendix 13.6.2.
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 traffic movements associated with the Project.
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 worse case scenario. The Council would also wish to see the distinction between airport-related and non-airport-related road traffic.	The PEIR and ES will be based on the most likely scenarios at the time of the assessment. The PEIR is currently based on a no Heathrow third runway scenario. The air quality assessment for the PEIR includes a breakdown of airport and non-airport related road vehicles. The same level of detail will be included in the ES. Throughout the assessment reasonable worst case assumptions have been made to address the uncertainties providing a robust, conservative approach.
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	The Air Quality and Emissions Mitigation Guidance for Sussex will be considered in the ES.

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		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.	
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.	This 11 km by 10 km domain will be used to provide contour plots of predicted concentrations for the ES. 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 PEIR. The same level of detail will be included in the ES. The Planning Inspectorate (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 response from PINS is included in Chapter 13 Air Quality.
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 on traffic flows and air quality in the district. In addition, we suggest the Study should include monitoring of ultrafine particles.	All sensitive receptors and AQMAs were examined in the air quality assessment for the PEIR. 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 for detailed modelling. Monitoring of PM ₁₀ is undertaken at continuous monitors in the study area.
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 Department for Environment, Food and Rural Affairs (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).
Horsham District Council	27 September 2019	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. This list should be expanded to include consideration of the emissions from the stack of the CARE energy-from-waste facility.	PINS has requested that further justification be provided to scope out other pollutants and this will be provided within the ES. Should any pollutant be found to be emitted at levels that require a detailed assessment then these will be included in the air quality assessment in the ES.
Mid Sussex District Council	1 October 2019	What year of emission factors are to be used for each modelling year?	Emission factors for the year of each assessment scenario have been used, with the exception of the 2032 scenario. For the PEIR assessment, 2030 emissions have been used for this scenario, as this is the latest year provided in the Defra predictions.
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 scenario. For the PEIR

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			assessment, 2030 backgrounds have been used for this scenario, as this is the latest year provided in the Defra predictions.
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 phase was screened out in the PEIR as no odorous materials are expected to be excavated. This will be checked in the ES (based on any updated results of the contaminated land assessment) and a more detailed assessment of odour emissions during the construction phase undertaken if needed.
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 will be based on the level of impact predicted, typical good practice for major developments and the availability of suitable measures. Construction mitigation measures will be based on the recommendations of the IAQM guidance.
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 year of airport construction (2024) and first year of highways construction (2029). This provides a conservative assessment and the same method will also be used for the ES.
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 Air Quality and Emissions Mitigation Guidance for Sussex will be considered in the ES following the update of the air quality assessment using the updated transport data.
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 Air Quality and Emissions Mitigation Guidance for Sussex will be considered in the ES.
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 PEIR and will be for the air quality assessment in 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 (Moorcroft and Barrowcliffe. et al., 2017).
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.	This is considered in the air quality assessment in the PEIR and will be in the 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 impact assessment.
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 for the PEIR includes a breakdown of airport and non-airport related road vehicles. The same level of detail will be included in the ES.
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.	PINS has requested that further justification be provided to scope out other pollutants and this will be provided within the ES. Should any pollutant be found to be emitted at levels that require a detailed assessment then these will be included. The works on the Central Area Recycling Enclosure (CARE) facility would include the replacement/relocation of a biomass boiler and an introduction of an additional biomass boiler for organic matter. The facility will only

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			contain conventional biomass boilers and no incineration, therefore the pollutants for this assessment have been appropriately screened taking into account the activities of the Project elements.
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.
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.	A detailed air quality assessment has been undertaken for the PEIR, taking into account predicted increases in aircraft numbers and traffic forecast. The results of the air quality assessment have been used as input to the health impact assessment.
Reigate and Banstead Borough Council	27 September 2019	Following the adoption of the DMP on 26 th September, 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 PEIR.
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 PEIR.
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 PEIR and will be for the air quality assessment in the 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 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.	The ES will include contour plots with predicted concentrations for all pollutants and assessment scenarios in the 11 km by 10 km domain. The air quality assessment has included receptors used in previous assessments of the airport. Predicted pollutant concentrations have been presented in tabular format in the PEIR Appendix 13.9.1 and the same level of detail will be included in the ES. The PEIR has included 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 same level of detail will be included in the ES. The results from the air quality assessment have been used to inform the health and wellbeing assessment relating to changes in air quality (Chapter 17). At the PEIR stage, the health assessment is qualitative in nature, but a quantitative health assessment relating to changes in local air quality concentrations will be undertaken for the final ES. The

Stakeholders	Date received	Stakeholder Comment	Arup Response
		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 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.	assessment does not however intend to convey health and wellbeing effects in economic terms, as while useful when comparing projects at a strategic level,; at a project level it masks the potential type, distribution and significance of impact, runs the risk of dismissing health and wellbeing effects when compared to the economic gains to be achieved and prevents the development of effective mitigation.
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 proposals include a range of embedded mitigation measures taken by the airport to reduce their air quality impacts (detailed in the PEIR Chapter 13).
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 recognise 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 not possible to practically model these impacts although ultrafine particles are included within the PM _{2.5} fraction which is modelled. Where any practical assessment methods are available, then these would be considered for the 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. GAL also support a continuous monitoring site on the airport (LGW3). It is anticipated the airport will continue this in the future. Air quality monitoring forms part of the mitigation measures for the air quality assessment and this is detailed in the PEIR.
West Sussex County Council		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 for the PEIR includes a breakdown of airport and non-airport related road vehicles. The same level of detail will be included in the ES.
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' and 'without Project' scenarios and an existing baseline year scenario. Predicted concentrations have been provided in the PEIR for all assessment scenarios and the same level of detail will be included in the ES.
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.	This 11 km by 10 km domain will be used to provide contour plots of predicted concentrations for the ES. It does not limit or define the extent of the emissions calculations as the extent of the study area is defined by the traffic screening using the IAQM/EPUK criteria in addition to everything contained in the 11 km by 10 km domain. The road traffic emissions have been presented as airport and non-airport

Stakeholders	Date received	Stakeholder Comment	Arup Response
			related in the PEIR. The same level of detail will be included in the ES. The Planning Inspectorate (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 response from PINS is included in Chapter 13 Air Quality.
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 (ICCI) assessment has been completed for the PEIR. The airport already has provision for fixed electrical ground power (FEGP) on any new stands to further reduce the use of auxiliary power units (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 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 Crawley Borough Council and Reigate & Banstead Borough Council for the last 5 years and a qualitative assessment included in the PEIR. It is proposed that three new pumping stations are provided that will connect to existing infrastructure. Therefore, no detailed odour assessment is required for the Project. The results of the air quality assessment have been used as input to the health impact assessment and will inform any mitigation and monitoring required.
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 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.	PINS has requested that further justification be provided to scope out other pollutants and this will be provided within the ES. Should any pollutant be found to be emitted at levels that require a detailed assessment then these will be included.
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 from the construction phase was screened out in the PEIR as no odorous materials are expected to be excavated. This will be checked in the ES (based on any updated results of the contaminated land assessment) and a more detailed assessment of odour emissions during the construction phase undertaken if needed. PINS has requested that further justification be provided to scope out other pollutants and this will be provided within the ES. Should any pollutant be found to be emitted at levels that require a detailed assessment then these will be included.
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 PEIR, 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 PEIR and will also be for the air quality assessment presented in the ES.
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 PEIR, including predicted changes in traffic flows.

Stakeholders	Date received	Stakeholder Comment	Arup Response
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.	Noted, however, the assessment will be undertaken following normal EIA guidelines, based on best available information, for assessing the likely significant effects on air quality from the Project. Throughout the assessment reasonable worst case assumptions have been made to address the uncertainties providing a robust, conservative approach.
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. Where any practical assessment methods are available, then these would be applied for the ES.

3 References

3.1 Web Articles

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>

3.2 Published Documents

Bull *et al.* (2018) IAQM Guidance on the assessment of odour for planning – version 1.1, Institute of Air Quality Management, London.

Department for Environment Food and Rural Affairs (Defra) (2021) Local Air Quality Management Technical Guidance (TG16).

Moorcroft and Barrowcliffe. *et al.* (2017) Land-use Planning & Development Control: Planning for Air Quality. v1.2. Institute of Air Quality Management, London.

Sussex Air Partnership (2019) Air Quality and Emission Mitigation Guidance for Sussex [Online]. Available at: https://sussex-air.net/Reports/Sussex_AQ_Guidance_2019.pdf

4 Glossary

4.1 Glossary of Terms

Table 4.1.1: Glossary of Terms

Term	Description
AQEG	Air Quality Expert Group
AQMA	Air Quality Management Area
APU	Auxiliary Power Unit
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

Term	Description
Defra	Department for Environment, Food and Rural Affairs
DMP	Development Management Plan
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
FEGP	Fixed Electrical Ground Power
GAD	Gatwick Airport Directive
GAL	Gatwick Airport Limited
HGV	Heavy Goods Vehicle
IAQM	The Institute of Air Quality Management
ICCI	In-combination Climate Change Impacts
LTO	Landing and Take-off
NEC	National Emission Ceilings
NO _x	Nitrogen Oxide
NO ₂	Nitrogen Dioxide
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PM _{2.5}	Particulate Matter, less than 2.5 micrometers in diameter
PM ₁₀	Particulate Matter, less than 10 micrometers in diameter
SRN	Strategic Road Network
WwTW	Wastewater Treatment Work