Gatwick Airport Northern Runway Project

Environmental Statement
Appendix 14.3.1 Summary of Stakeholder Scoping Responses – Noise and Vibration

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1 Introduction

1.1 General

1.1.1 This document forms Appendix 14.3.1 of the Environmental Statement (ES) prepared on behalf of Gatwick Airport Limited (GAL). The ES presents the findings of the Environmental Impact Assessment (EIA) process for the proposal to make best use of Gatwick Airport's existing runways and infrastructure (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 **ES Chapter 5: Project Description** (Doc Ref. 5.1).

1.1.2 This document provides the summary of stakeholder scoping responses relating to noise and vibration for the Project and how they have been taken into account in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and other parts of the ES.

2 Scoping Responses

2.1 Summary of Stakeholder Scoping Responses for Noise and Vibration

2.1.1 Table 2.1.1 summarises the stakeholder responses to scoping relating to noise and vibration.

Table 2.1.1: Summary of Stakeholder Scoping Responses

Consultee	Date	Details	How/where taken into account in ES
Burstow Parish Council	28 September 2019	With the Northern Runway in use on a regular basis, many more residents would be subjected to noise over a much larger area of Smallfield. This is an unsatisfactory situation as there are far less homes affected currently as none have been built under the flightpath since the airport became a commercial enterprise. What is even worse is that more noise complaints are received by Gatwick Airport these days due to the number of movements even though aircraft are decidedly quieter. With the prediction of Gatwick Airport Limited that the number of Air Traffic Movements (ATM) will increase from 280,700 in 2017/18 to 300,000 in 2022/23, an increase of 6.9% is not very welcome for the residents close to the airport. It is to be hoped that the Department for Transport (DfT) do not allow any increase in night movements.	**ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) provides an assessment of the noise impacts expected from the Project based on noise modelling for operations in 2019, and in the base case and with the Project in 2029, 2032, 2038 and 2047. Noise impacts in the Smallfields area are quantified and mitigation is proposed. With regard to night flights, the DfT is consulting on night restrictions and it is assumed that these will remain in place with the Project.
Civil Aviation Authority	30 September 2019	Airports and Air Navigation Service Providers (ANSPs) are expected to inform and engage overflown communities about aircraft operational change and change to aircraft movements when such changes could have a noise impact on communities. The Air Navigation Guidance 2017 and direction 15 of the Airspace Directions given to the CAA requires us to produce guidance on transparency and engagement for such operational changes to airspace usage not covered by Airspace Change Process (ACPs) or Planned Permanent Redistributions (PPRs). This guidance is described in detail from page 97 of CAP 1616. Although the CAA has no decision-making role concerning such changes, we would expect GAL to publish this information where it is relevant to its proposed dual runway operations.	The noise assessment reported in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) follows the guidance in CAP1616 and provides this information.
Civil Aviation Authority	30 September 2019	It would be beneficial to add ATMs and number of passengers should be given on a yearly basis for baseline year and forecast years.	ATMs forecasts modelled are provided in Section 14.7 **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).

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Civil Aviation Authority	30 September 2019	In reference to paragraph 6.29, assessment years do not mention or refer to year of maximum effect - only GHG emissions refers to a worst case scenario in paragraph 7.8.29, but this needs also to be considered for noise and local air quality emissions - the year of maximum effect may be different for each.	An explanation as to why 2032 is the year of maximum noise effect is provided in Section 14.7 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Civil Aviation Authority	30 September 2019	In reference to paragraph 7.8.2, consider the following applications: ▪ Department for Transport, Aviation Policy Framework, March 2013 (DfT, 2013) ▪ Consultation response on UK airspace policy: a framework for balanced decisions on the design and use of airspace, 2017.	These documents have been considered, as summarised in Section 14.2 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Civil Aviation Authority	30 September 2019	In reference to paragraph 7.8.2, What time period is this data for? If it is to be assessed for day, evening and night, data should be provided for the three time periods, not 24h.	The air noise assessment considers a 92 day summer average 16 hour day and 8 hour night and annual average day/evening and night levels.
Civil Aviation Authority	30 September 2019	In reference to paragraph 7.8.3, Consider the following documents: ▪ Air Navigation Guidance 2017 (ANG), DfT, October 2017 ▪ ICAO Annex 16 noise certification standards ▪ ECAC.CEAC Document 29 4th Edition, 2016: Report on Standard Method of Computing. Noise Contours around Civil Airports.	These documents have been considered.
Civil Aviation Authority	30 September 2019	In reference to paragraph 7.8.7, '…using the same flight paths'. Since most southern runway Standard Instrument Departures (SID) are RNAV, but the northern runway SIDs are conventional, the dispersion of aircraft around the SID may be different for the two runways. See also comment on para 7.8.36.	As further explained in Section 14.8 and **ES Appendix 14.9.2: Air Noise Modelling** (Doc Ref. 5.3), aircraft using the altered northern runway would use the same flight paths as currently flown from the existing northern runway but would be displaced by some 12 metres further to the north. The main and northern runway flight paths modelled run parallel to each other maintaining the track of the respective extended runway centrelines. At the point that aircraft begin to turn to the north or south (between 5 and 16 km from the runway) the main and northern runway flight paths merge. Flights from both runways are included in the assessment, and the forecast allows for growth in operations of larger aircraft from the main runway.
Civil Aviation Authority	30 September 2019	In reference in paragraph 7.8.31, consider including noise contour areas, population counts and Noise Quota Counts in the assessment reports.	Contour areas and population counts are used extensively because they relate to noise impact. Quota counts are not used because they do not directly relate to noise impact.
Civil Aviation Authority	30 September 2019	In reference to paragraph 7.8.36, since GAL explicitly state they do not require an airspace change, we do not believe it is correct to state that 'within the turn, the flight paths will not be distinguishable'. The northern runway SIDs are conventional SIDs, whereas the current runway SIDs are RNAV, so there will be differences in flight track dispersion in the turns on both easterly and westerly operation. If GAL is separating this DCO proposal from future FASI(S) airspace changes, then the DCO assessment needs to reflect that the northern runway's conventional SIDs will likely result in flight path differences around the first turn, compared with the existing main runway RNAV SIDs.	The noise modelling is based on the track dispersions observed. It is not expected that increased use of the northern runway would be distinguishable from main runway departures once aircraft have left the extended runway centre line and are in the turn, and beyond.
Civil Aviation Authority	30 September 2019	In reference to paragraph 7.8.39, what does the second bullet 'Type 2: Comparison against absolute noise level benchmarks' mean? Is this a future do-nothing scenario or something else?	Absolute levels for Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL) are used. Yes, future with Project noise levels are compared against future baseline ie do minimum, as well as the current baseline.

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Civil Aviation Authority	30 September 2019	In reference to paragraph 7.8.57, insufficient evidence presented to justify scoping out use of APUs from ground noise assessment. What are the 'operational reports' that 'demonstrate that it is rare for an aircraft to use the APU whilst on any of the stands as ground power is generally available'?	Noise from aircraft auxiliary power units (APUs) has been scoped into the assessment and is considered within Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Civil Aviation Authority	30 September 2019	In reference to paragraph 7.11, consider including WebTAG, QALY or another health and wellbeing noise metric in the analysis.	**ES Chapter 18: Health and Wellbeing** (Doc Ref. 5.1) provides an assessment of the effects of noise on health and wellbeing. WebTAG assessment are provided see **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) as well as and **ES Appendix 14.9.2: Air Noise Modelling** (Doc Ref. 5.3) and **ES Appendix 14.9.4: Road Traffic Noise Modelling** (Doc Ref. 5.3).
Charlwood Parish Council	30 September 2019	Very concerned that regular use of the northern runway will mean more noise for the communities of Charlwood and Hookwood. Will be disappointed if the Assessment merely concludes that the noise will be no worse than at present.	**ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) provides an assessment of the noise impacts expected from the Project based on noise modelling for operations in 2019, and in the base case and with the Project in 2029, 2032, 2038 and 2047. Noise impacts in the Charlwood area are quantified and mitigation is proposed.
Charlwood Parish Council	30 September 2019	Regular use of the Northern runway would especially mean extra noise, both air noise and ground noise, especially for houses in Ifield Road and Russ Hill. Local residents already complain when the Northern runway is used. The holding areas and the new round-the-end taxiway will be used by large aircraft and will obviously seriously increase ground noise for local residents and this needs to be included in the assessment. We ask that a site at the southern end of Ifield Road to be included in the specific locations to be assessed, in addition to Charlwood Primary (not Infant) School.	**ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) provides an assessment of the noise impacts expected from the Project based on noise modelling for operations in 2019, and in the base case and with the Project in 2029, 2032, 2038 and 2047. Very detailed air noise data is provided for seven Community Representative Locations, one of which is Charlwood Village Primary School off Chapel Road. Air noise increases and associated impacts in Ifield Road and Russ Hill are specifically reported. Ground noise is summarily modelled and assessed using four example sites around Charlwood.
Charlwood Parish Council	30 September 2019	Told that it is proposed to construct a new around-end taxiway and new holding areas. But it is difficult to make proper assessment without knowing the extent of these developments and whether it is proposed to construct new earth bunds, such as have been constructed around all the northern side of the airport, in order to shield communities from noise and visual intrusion.	The ground noise modelling assessment indicates a new bund would be required. Details are given in Section 14.8 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Charlwood Parish Council	30 September 2019	We suggest that the study uses the WHO (Europe) aircraft noise limit guidelines and therefore addresses comprehensively all areas impacted by noise down to 45 dB L_{den}.	Section 14.2 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) discusses the WHO Guidelines and how they have been considered for this Project.
Charlwood Parish Council	30 September 2019	In reference to paragraph 7.8.33, *"Leq 16 hour day and 8 hour night will be used as the primary metrics to quantify impacts in terms of the areas and population within the various 3 dB noise contour bands in the ranges above."* It proposes that noise event frequency metrics should be secondary metrics only and it seeks to give the impression in paragraph 7.8.20 that this has been agreed with the Noise Management Board (NMB). That is not the case.	Paragraph 7.8.33 of **ES Appendix 6.2.1: Scoping Report** (Doc Ref. 5.3) discusses the requirements of CAP 1616. Paragraph 7.8.20 discusses the work of the NMB. It is noted that Charlwood Parish Council do not agree with the CAP 1616 guidance that refers to the number above metrics as secondary. Both Leq and number above metrics are presented in the ES (**ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and its

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			appendices), as are other metrics aimed at giving full information on the noise changes expected including in Charlwood.
Charlwood Parish Council	30 September 2019	The scoping report proposes that there would be limited effects to arise regarding property values. CPC believe that the increase in flight numbers that would arise as a result of the project and their concentration in areas that already suffer aircraft noise would be very likely to cause reductions in the value of homes and other assets. All potential value impacts should be fully quantified and, should the project proceed, fully compensated for.	As noted in **ES Chapter 17: Socio-Economic** (Doc Ref. 5.1) it is not considered that there are likely to be direct impacts in property values inside the Project site boundary due to the very limited change in flight paths and therefore the potential for effects to arise is limited. The issues of flightpath changes and their likely impacts are considered fully in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1), together with the mitigation appropriate to address the assessed impacts in line with other airport DCO applications. The ES does not attempt to look beyond this to potential effects on individual properly values.
Charlwood Parish Council	30 September 2019	Paragraph 7.11.18 of the Scoping Report outlines that health data collection will focus on Crawley and Reigate & Banstead. Charlwood Parish is in neither Crawley nor Reigate and Banstead.	**ES Chapter 18: Health and Wellbeing** (Doc Ref. 5.1) provides an assessment of the effects of noise on health and wellbeing.
Charlwood Parish Council	30 September 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.	
Crawley Borough Council	30 September 2019	CBC consider that the main impacts of a dual runway operation on air noise are: (i) - the increase in overflights of existing residents both in terms of total noise (L_{Aeq}) and the increase in the number of events; and (ii) that communities within 6-7 km from the end of the runways and to the north of the existing departure route will be 210 m closer to departing aircraft. CBC consider that it is important for the ES to quantify the impacts of both these factors to appropriately measure the noise impact.	**ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) provides an assessment of the noise impacts expected from the Project based on noise modelling for operations in 2019, and in the base case and with the Project in 2029, 2032, 2038 and 2047. Noise impacts in these areas (ie Charlwood/Russ Hill in the west and Burstow, Smallfields in the east) are identified. Those areas likely to experience the greatest increases in noise are quantified through the use of a series of noise metrics and figures displaying noise levels.
Crawley Borough Council	30 September 2019	It is generally accepted that there is no single metric that can evaluate the impact of aviation noise. Acoustically one old Boeing 747-100 is roughly equivalent to 128 x Airbus 320-NEOs as it is about 20 dB louder on departure. Given the choice some residents would prefer one single B747-100 to 128 x A320 NEOs as the noise is over and done with in one go. However further from the airfield and at night residents may prefer quieter NEOs which won't wake them up as opposed to one noisier aircraft which might. To measure the total noise the EIA Scoping Report (para 7.8.29) recommends using the summer 2018 noise contours ($L_{Aeq,16hr}$ & $L_{Aeq,8hr}$) as the base line and then comparing this to the summer contours for future seasons. The summer contours are based on 92 days during the summer season as this is traditionally the noisiest period. However, Gatwick is already at near capacity during this season on a single runway operation and any future growth on a single runway operation will be achieved by 'peak spreading', namely outside the busiest periods (see diagram 4.5.1 from the EIA Scoping Report below). This is also likely to be the case for the dual-runway operation, where growth will be in both the busiest summer period (captured by the 92-day summer contours) and by 'peak spreading' (outside	Diagram 4.5.1 of the **ES Appendix 6.2.1: Scoping Report** (Doc Ref. 5.3) indicates clearly that the highest numbers of flights would continue to occur in the months of June to September as captured by the Leq noise modelling period form from 16 June to 15 September. This is confirmed by current forecasts (see **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1). Air noise is assessed as adverse if future levels exceed absolute levels (ie LOAELs) which are defined by the DfT in terms of 92 day summer contours. Furthermore, in the UK the dose/response for aircraft noise is measured using summer season noise levels, not annual averages which would dilute levels. The research underpinning the UK's choice of the summer Leq contours looked at the performance of annual metrics and concluded that there was no evidence to support they correlated better with

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		the summer period) and therefore not captured by the summer contours. Therefore, the sole use of the summer contours will not capture the full impact in of 'peak spreading' and the total noise.	annoyance than $L_{Aeq,16h}$ (see for example CAA CAP1506 2021 §8.8). The dataset for this research included Heathrow, which has a less seasonal traffic profile. This notwithstanding, annual L_{den} and L_{night} contours are also provided for baseline and with Project conditions in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) Section 14.6 and 14.9 to illustrate noise changes over the whole year including the winter months.
Crawley Borough Council	30 September 2019	CBC consider it is necessary to produce L_{den} and L_{night} contours as well as the summer contours as they have the advantage of including all the flights from the whole year[8]. Gatwick are already required by The Environmental Noise (England) Regulations 2006 to produce L_{den} and L_{night} contours for their Noise Action Plans every 5 years, the last one was published in 2019 using 2016 L_{den} contour.	Annual average L_{den} and L_{night} contours are provided in the **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Crawley Borough Council	30 September 2019	The Environmental Noise (England) Regulations 2006 recommends L_{den} contours of 55 dB or above and L_{night} contours of 50 dB or above. However, since 2006 there has been new research[9] which recommends adverse effects from aircraft noise can begin at L_{den} 45 dB and L_{night} of 40 dB. CBC therefore consider that in order to correctly identify the full impact of noise from dual runway use that the L_{den} and L_{night} contours starting at 45 dB and 40 dB should be included as part of the ES in order to accurately establish the noise impact, as well as the summer contours proposed.	The assessment of air noise follows CAA guidance as in CAP 1616: ▪ $L_{eq,\ 16\ hour}$ day 51 to 72 dB; and ▪ $L_{eq,\ 8\ hour}$ night 45 to 72 dB. L_{den} contours are also provide from 55 dB and above in 5 dB steps and L_{night} contours from 45 dB upwards in 5 dB steps.
Crawley Borough Council	30 September 2019	The other aspect of overflight is the number of events. These are best measured using number above contours (N65 day & N60 night) as proposed in the EIA Scoping Report. However, when preparing these contours CBC consider that all aircraft over the respective decibel level irrespective of altitude (ie the 7000' 'cap' in CAP1498), must be included.	The assessment of air noise follows CAA guidance as in CAP 1616: ▪ N65 day 20, 50, 100, 200, 500; and ▪ N60 night 10, 20, 50, 100 In modelling these noise metrics no altitude cut-off is used. Overflights are considered a non-noise metric and are assessed using the CAP1489 definition, ie up to 7,000 ft above local see level.
Crawley Borough Council	30 September 2019	The use of the northern runway will bring departures (for Code C aircraft only) 210 m closer to existing communities on the north side of the airport. To assess the impact on this type of aircraft on these communities a noise footprint of the departure of such an aircraft is required. CBC recommend a 60 dB & 65 dB contour (related to the N-above) for both standard aircraft and the new NEO/max from both main and northern runway and for both east and west departures is provided.	Agreed, L_{max} 60 and 65 dB footprints as suggested are provided in Section 14.9.
Crawley Borough Council	30 September 2019	Para 7.8.36 of the EIA Scoping Report states that it is proposed to maintain the existing Noise Preferential Routes (NPRs) for departing aircraft. However, there is no indication whether the departure routes can comfortably manage departures efficiently from a dual runway operation, especially during periods when departures dominate (namely early morning with the surge of short haul departures). With the expansion of the long-haul market at Gatwick there will be an increase of wide-bodied aircraft which require greater spacing from smaller aircraft so potentially reducing the number of departures per hour. CBC consider that data on spacing and departure/arrival rates is required as part of the ES. This needs to include data on the maximum number of departures per hour which can safely and efficiently use each NPR based on the present and predicted fleet mix proposed at Gatwick. Should the existing NPR's not be able to accommodate the increase in flights, then full assessment would be needed of any additional routes.	As explained in Section 14.8 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and **ES Appendix 14.9.2: Air Noise Modelling** (Doc Ref. 5.3), aircraft using the altered northern runway would use the same initial departure flight path as currently flown from the existing northern runway but displaced by some 12 metres further to the north (equating to about a third of a wingspan of the average sized aircraft). As the aircraft commence turning, they would join the existing routes and be indistinguishable from traffic departing from the main runway. The numbers of movements are set out in the Table 14.7.1 in Section 14.7 of **ES Chapter 14: Noise and Vibration**.
Crawley Borough Council	30 September 2019	It is known that 'go-arounds' have steadily increased in number and in percentage terms since 2012 and therefore as the number of arrivals increase then the number of 'go-arounds' will increase at least proportionally	Aborted landings result in 'go-arounds', the standard procedure that occurs when an arriving aircraft aborts landing during the final stages

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		or as the recent trend shows, disproportionally. This point needs to be examined in further detail as 'go-arounds' can be very disturbing for residents and can cause a higher than normal level of anxiety due the low altitude and displaced location of the aircraft. This data needs to form part of the evidence informing the ES.	of approach. They occur most often as a result of a departing aircraft or preceding arriving aircraft not fully vacating the runway ahead of a landing aircraft. On these occasions the pilot takes averting action under a defined standard missed approach procedure. On westerly operations, typically these aircraft abort landing at low level, climb to 3,000 feet and loop round over Crawley to make a fresh approach to the runway. However, the CAA do not model noise from go-arounds at UK airports because their effect on the resultant noise contours is not significant. In the busy summer season in 2019 there were approximately three go-arounds each day. 85% of these occurred within the 16 hour day and evening period, with 15% at night (23:00-07:00 hours). The Project includes new exit/entrance taxiways, and end around taxiways, and has been designed so that the numbers of go-arounds do not significantly increase. As such, noise disturbance from go-arounds is not expected to increase.
Crawley Borough Council	30 September 2019	A ground noise report was produced by Gatwick in 2016 but was never published. This report needs to be published as this data will inform the baseline of the ES.	Further analysis of the ground noise baseline is reported in the ES (**ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1)). The ground noise baseline report is provided in **ES Appendix 14.9.6: Ground Noise Baseline Report** (Doc Ref. 5.3).
Crawley Borough Council	30 September 2019	The proposal in 7.8.41 is to assess ground noise against absolute benchmarks of 55 dB L_{Aeq} for the day and evening and 45 dB L_{Aeq} for the night-time. These figures are derived from the internal noise standards specified in BS8233 and relate to 'steady' noise. This is acceptable for the overall general 'hum' from Gatwick but where residents will be aware of individual distinguishable events then a different methodology will be required. The reason being is that Ground noise is considered to be 'commercial or industrial' noise and not air-noise which is considered transportation noise. Therefore, individual distinguishable events need to be assessed in the similar manner as with all other commercial or industrial noise which is by using BS4142:2014. This would include (but not exclusively) engine testing and taxiing aircraft close to a receptor (the end-around taxiways and Juliet holding spur).	The ES uses Leq benchmarks and assesses change in Leq. It does not use the BS4142 method to assess aircraft ground noise, but in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) Section 14.9 it predicts and assesses L_{max} levels above 60 and 65dB from taxiing aircraft and engine testing and how the numbers of these will change with the Project. The BS4142 method is used in the assessment of fixed noise sources such as those in the Central Area Recycling Enclosure (CARE) and other buildings around the airfield.
Crawley Borough Council	30 September 2019	The Gatwick 'hum' in any particular location varies according to wind direction. CBC consider that it would therefore be appropriate to measure the background (L90) noise levels in upwind conditions to ensure a true background noise level. The ground noise propagation should then be calculate using a positive downwind scenario.	Wind direction has been considered carefully in the ES as explained in **ES Appendix 14.9.3: Ground Noise Modelling** (Doc Ref. 5.3). Easterly and westerly operations are modelled separately. Initially downwind propagation was considered in all modelling cases, but this provided baseline levels above the measured baseline that were too conservative. This is because some receptors cannot always be downwind of some noise sources because the runway changes direction. To model wind effects more accurately, a realistic average wind speed and direction was used for westerly operations, and a different realistic average wind speed and direction was used for easterly operations. Different wind speeds and directions were also modelled for day and night.

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Crawley Borough Council	30 September 2019	To measure the total noise the EIA Scoping Report (para 7.8.29) recommends using the summer 2018 noise contours ($L_{Aeq,16hr}$ and $L_{Aeq,8hr}$) as the base line and then comparing this to the summer contours for future seasons. The summer contours are based on 92 days during the summer season as this is traditionally the noisiest period. However, Gatwick is already at near capacity during this season on a single runway operation and any future growth on a single runway operation will be achieved by 'peak spreading', namely outside the busiest periods (see diagram 4.5.1 from the EIA Scoping Report below). This is also likely to be the case for the dual-runway operation, where growth will be in both the busiest summer period (captured by the 92-day summer contours) and by 'peak spreading' (outside the summer period) and therefore not captured by the summer contours. Therefore, the sole use of the summer contours will not capture the full impact in of 'peak spreading' and the total noise.	Diagram 4.5.1 of **ES Appendix 6.2.1: Scoping Report** (Doc Ref. 5.3) indicates clearly that the highest numbers of flights would continue to occur in the months of June to September as captured by the Leq noise modelling period form from 16 June to 15 September. This is confirmed by current forecasts (see **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1)). Air noise is assessed as adverse if future levels exceed absolute levels (ie LOAELs) rather than changes at any level. Furthermore, in the UK the dose/response for aircraft noise is measured using summer season noise levels, not annual averages which would dilute levels. The Airports Commission noise 'scorecard' from the 2014 consultation has been superseded by government consultations as summarised above that do not refer to L_{den}. Air Navigation Guidance 2017, CAP 1616 does not require annual average L_{den} contours to be used.
Crawley Borough Council	30 September 2019	CBC are concerned that there has already been an increase in road traffic 'spillage' from the main highways to the side roads and country lanes for airport trips. Even though the total noise will not be comparable to the main roads, the increase can be large and proportionally more disturbing due it's close proximity to residents and due to the fact it is made up by multiple 'events' rather than a general hum. It is therefore considered that an assessment should be made of traffic flows on local roads and how this traffic is associated with Gatwick and how it can be mitigated. The current methodology for this the assessment set out in para 7.8.42 is ambiguous and needs to be clarified and other receptor points on the local road network agreed with CBC to establish the impacts.	Noise change due to changes in traffic on adjacent roads is assessed for the construction and operational phases in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Crawley Borough Council	30 September 2019	Para 5.3.18 explains that much of the construction work will take place overnight to reduce impact on the operation of the airport, and access roads. This will therefore create noise during the only period of relative quiet for the nearest residents. The ES should consider the additional burden placed on these residents in detail and all forms of potential mitigation must be explored and applied not just the physical measures currently listed in the EIA Scoping Report. For example, if noise levels are very high or during periods of very hot weather where windows have to be opened for ventilation, mitigation could be alternative temporary accommodation for nearby residents. It is accepted that residents will experience limited vibration from the construction works on site but the off-site construction work on the road network is much closer to residents and needs to be fully assessed as part of the ES. There is potential for use of the Gatwick Goods Yard railhead to increase during the construction phase of the Project, and this may be predominantly at night. This would increase noise from the Goods Yard itself and from HGV traffic which would have an impact on nearby residents in Bowthorpe House and Forge Wood. This should be assessed as part of the ES and must be appropriately mitigation.	The assessment of construction noise and vibration is provided in Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1). Construction noise has been modelled from the largest teams of plant expected to carry out all the main works, and has been assessed cumulatively as a worst case at this stage. Day and night periods are assessed separately. See **ES Appendix 14.9.1: Construction Noise Modelling** (Doc Ref. 5.3). The assessment has been refined for the ES. A full package of mitigation is proposed in line with that used for other major projects that require work at night, see Section 14.8 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1). Noise insulation would be offered for qualifying buildings. Noise insulation, or if other measures are not possible, temporary re-housing would avoid residents being significantly affected by levels of construction noise inside their dwellings. The assessment reported in the ES provides an estimate of the buildings that are likely to qualify for noise insulation or to qualify for temporary rehousing, if any.

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East Sussex County Council	30 September 2019	Consideration of a more dispersed flight path where (albeit) more people are affected, less people are affected more intensely.	This is beyond the scope of this Project. It will be considered as part of the Future Airspace Strategy Implementation review for the airspace over the south east of England (FASI-South) project.
East Sussex County Council	30 September 2019	Consideration of more efficient routes by greater utilisation of Continuous Descent and Climb operations.	This is beyond the scope of this Project. It will be considered as part of the FASI-South project.
East Sussex County Council	30 September 2019	Consideration of enabling aircraft to climb more steeply than they do at present to further minimise noise impacts on communities.	This is beyond the scope of this Project. It will be considered as part of the FASI-South project.
East Sussex County Council	30 September 2019	Consideration of noise insulation provision for residential properties and businesses where appropriate.	A full package of mitigation is proposed, including an enhanced noise insulation scheme for residential properties (see Section 14.8 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1)). Non-residential noise sensitive buildings are assessed in the ES, including **ES Chapter 14: Noise and Vibration**.
East Sussex County Council	30 September 2019	The continuation of the Noise Management Board, or an appropriate forum, to support and mitigate (wherever possible) the negative impact of aircraft noise on local communities.	There is no plan to cease the NMB.
Highways England	1 October 2019	Traffic and environmental impact arising from changes to the Strategic Road Network (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).	See Section 12.5 of **ES Chapter 12: Traffic and Transport** (Doc Ref. 5.1) of the ES on assumptions and limitations of the assessment, including on construction and operational traffic. Further work has been undertaken for the application for development consent including a more detailed assessment of highway construction impacts in conjunction with Highways England. **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) provides detailed assessment of noise impacts during the construction and operational phase.
Historic England	1 October 2019	There is a case for inclusion of heritage/cultural facilities within the non-residential receptor's category of the noise assessment chapter (paragraph 7.8.25). The enjoyment and appreciation of heritage sites, museums & galleries, and historic parks and gardens could be disproportionately affected by changes in the noise regime and visual intrusion resulting from more flights and additional ground facilities proposed by the project. Some of these could be well beyond the 3 km radius set for the heritage impacts (eg Hever Castle).	Meetings have been held with Historic England to discuss this. Noise effects on heritage assets are assessed and two heritage assets are included in the 50 non-residential locations for which detailed noise levels and changes due to the Project are provided (See **ES Appendix 14.9.2: Air Noise Modelling** (Doc Ref. 5.3). Overflight analysis for landscape and visual, ecology and heritage assessments has been included (see Sections 14.9 and 14.13 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1)).
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.	**ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) provides an assessment of the noise impacts expected from the Project based on noise modelling for operations in 2019, and in the base case and with the Project in 2029, 2032, 2038 and 2047. Noise impacts in the northern part of Horley are quantified and mitigation is proposed.
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.	Noise impacts are assessed over the full 24 hour period in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).

Consultee	Date	Details	How/where taken into account in ES
Horsham District Council	27 September 2019	The main impacts of a dual operation runway operation on air noise are the increase in overflights of existing residents both in terms of total noise (L_{Aeq}) and the increase in the number of events. Also, communities within 6-7 km from the end of the runways and to the north of the existing departure route will be 210 m closer to the departing aircraft. It is therefore important to quantify the impacts of these two main issues.	**ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) provides an assessment of the noise impacts expected from the Project based on noise modelling for operations in 2019, and in the base case and with the Project in 2029, 2032, 2038 and 2047.
Horsham District Council	27 September 2019	It is generally accepted that there is no single metric that can evaluate the impact of aviation noise. Acoustically one old Boeing 747-100 is roughly equivalent to 128 x Airbus 320-NEOs as it is about 20 dB louder on departure. Given the choice some residents would prefer one single B747-100 to 128 A320 NEOs as the noise is over and done with in one go. However further from the airfield at night residents may prefer quieter NEOs which will not wake them up to one nosier aircraft which might.	Noise impacts from the departure routes from the northern runway are modelled assessed and reported in several different ways. Maps are provided with **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) showing the different departure routes and the areas overflown from each as well as L_{max}, L_{eq} and number above L_{max} noise levels for day and night and how these will change with the Project.
Horsham District Council	27 September 2019	To measure the total noise the EIA Scoping Report (para 7.8.29) recommends using the summer 2018 noise contours ($L_{Aeq,16hr}$ and $L_{Aeq,8hr}$) as the base line and then comparing this to the summer contours for future seasons. The summer contours are based on 92 days during the summer season as this is traditionally the noisiest period. However, Gatwick is at near single runway operation will be achieved by 'peak spreading', namely outside the busiest periods. This is also likely to be the case for the dual-runway by the 92-day summer contours but again to achieve the predicted growth figures 'peak spreading' will be required which will be outside the summer period and therefore not captured by the summer contours.	Diagram 4.5.1 of **ES Appendix 6.2.1: Scoping Report** (Doc Ref. 5.3) indicates clearly that the highest numbers of flights would continue to occur in the months of June to September as captured by the Leq noise modelling period form from 16 June to 15 September. This is confirmed by current forecasts (see **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1). Air noise is assessed as adverse if future levels exceed absolute levels (ie LOAELs) which are defined by the DfT in terms of 92 day summer contours. Furthermore, in the UK the dose/response for aircraft noise is measured using summer season noise levels, not annual averages which would dilute levels. The research underpinning the UK's choice of the summer Leq contours looked at the performance of annual metrics and concluded that there was no evidence to support they correlated better with annoyance than $L_{Aeq,16h}$ (see for example CAA CAP1506 2021 §8.8). The dataset for this research included Heathrow, which has a less seasonal traffic profile. This notwithstanding, annual L_{den} and L_{night} contours are also provided for baseline and with Project scenarios in Section 14.6 and 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) to illustrate noise changes over the whole year including the winter months.
Horsham District Council	27 September 2019	Therefore, sole use of the summer contours will not capture the full impact of 'peak spreading' and the total noise. It is therefore necessary to produce L_{den} and Lnight contours as well as the summer contours as they have the advantage of including all the flights from the whole year.	See above.
Horsham District Council	27 September 2019	The Environmental Noise (England) Regulations 2006 recommends L_{den} contours of 55 dB or above and L_{night} contours of 50 dB or above. However, since 2006 there has been new research by the World Health Organisation which recommends adverse effects from aircraft noise can begin as L_{den} 45 dB and L_{night} pf 40 dB. It is therefore recommended to correctly identify the full impact of noise from dual-runway use that the L_{den} and L_{night} contours start at 45 dB and 40 dB.	The assessment of air noise follows CAA guidance as in CAP 1616: ▪ $L_{eq,\ 16\ hour}$ day 51 to 72 dB; and ▪ $L_{eq,\ 8\ hour}$ night 45 to 72 dB. L_{den} contours are also provide from 55 dB and above in 5 dB steps and L_{night} contours from 45 dB upwards in 5 dB steps.

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Horsham District Council	27 September 2019	If permission is granted for the second runway then the predicted L_{den} and L_{night} contours will also act as a comparison for future Noise Action Plans to be benchmarked against.	Noted.
Horsham District Council	27 September 2019	When preparing number-above contours all aircraft over the respective decibel level should be included regardless of altitude.	Agreed, the noise modelling does not cut off aircraft above any altitude.
Horsham District Council	27 September 2019	The use of the northern runway will bring departures 210 m closer to existing communities on the north side of the airport. It is proposed to only use Code C aircraft on that runway. To assess the impact on this type of aircraft on these communities a noise footprint of the departure of such an aircraft would be required. I would recommend a 60 dB and 65 dB contour for both standard aircraft and the new NEO/max from both main and northern runway and for both east and west departures.	These suggested L_{max} footprints have been modelled, assessed and reported in Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Horsham District Council	27 September 2019	It is proposed to maintain the existing Noise Preferential Routes (NPRs) for departing aircraft. With aircraft movements proposed to increase up to 70 movements per hour. There is no indication in the Scoping Report whether the departure routes can comfortably manage this flow, especially during periods when departures dominate. With the expansion of the long-haul market at Gatwick there will be an increase of wide-bodied aircraft which require greater spacing and departure/arrival rates is required, especially the whole of the Airspace is being redesigned through the Future Airspace Strategy Implementation programme for the South of England - or FASI(S) as it is more commonly referred to- and there is the potential for new departure routes.	As further explained in Section 14.8 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and **ES Appendix 14.9.2: Air Noise Modelling** (Doc Ref. 5.3), aircraft using the altered northern runway would use the same flight paths as currently flown from the existing northern runway but displaced by some 12 metres further to the north (equating to about a third of a wingspan of the average sized aircraft). The numbers of movements are set out in the Table 14.7.1 in Section 14.7 of **ES Chapter 14: Noise and Vibration**.
Horsham District Council	27 September 2019	If permission is granted for the upgrading of the standby runway then between that permission and the beginning of the operation the results of FASI(S) will be published. If permission is granted for a twin runway operation, then FASI(S) will have to take that into account. This fact may well influence the need for new departure route for a dual runway operation, especially on Routes 3 or 4. However, GAL is likely to argue that it would require a full Airspace Change Consultation (CAP1616). Since permission would have already been granted for a second runway the 'safety/efficiency' argument can be used to much greater effect. It is therefore very important to understand that by 2038 with no airspace changes that Gatwick can operate at up to 70 movements per house without risk to safety or efficiency.	The Project has been designed in line with all relevant legislation and guidance relating to safety and with the aim of improving operational resilience and efficiency.
Horsham District Council	27 September 2019	The increase in the number of 'go-arounds' needs to be examined in further detail as go-arounds can be very disturbing for residents and can cause a higher than normal level of anxiety due to the low altitude and displaced location of the aircraft.	Aborted landings result in ‘go-arounds’, the standard procedure that occurs when an arriving aircraft aborts landing during the final stages of approach. They occur most often as a result of a departing aircraft or preceding arriving aircraft not fully vacating the runway ahead of a landing aircraft. On these occasions the pilot takes averting action under a defined standard missed approach procedure. On westerly operations, typically these aircraft abort landing at low level, climb to 3,000 feet and loop round over Crawley to make a fresh approach to the runway. However, the CAA do not model noise from go-arounds at UK airports because their effect on the resultant noise contours is not significant. In the busy summer season in 2019 there were approximately three go-arounds each day. 85% of these occurred within the 16 hour day and evening period, with 15% at night (23:00-07:00 hours). The Project includes new exit/entrance taxiways, and the end around taxiways and has been designed so that the numbers

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			of go-arounds do not significantly increase. As such, noise disturbance from go-arounds is not expected to increase.
Horsham District Council	27 September 2019	A ground noise report was produced by Gatwick in 2016 but was never published. This report needs to be published as a part of the DCO application.	Further analysis of the ground noise baseline was reported in the PEIR. The ground noise baseline report is provided as **ES Appendix 14.9.6: Ground Noise Baseline Report** (Doc Ref. 5.3).
Horsham District Council	27 September 2019	Ground noise is 'commercial or industrial' and should therefore be assessed in the similar manner as all other commercial or industrial noise using BS4142:2014. The standards used in BS8233 relate to anonymous or steady noise which would include the 'hum' caused by Gatwick but not individual distinguishable events which will cause a greater level of annoyance. This would include (but not exclusively) engine testing and taxiing aircraft close to a receptor.	The ES uses Leq benchmarks and assesses change in Leq. It does not use the BS4142 method for aircraft ground noise but in Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) it predicts and assesses L_{max} levels above 60 and 65 dB from taxiing aircraft and engine testing and ow the numbers of these will change with the Project. The BS4142 method is used in the assessment of fixed noise sources such as those in the CARE and other buildings around the airfield.
Horsham District Council	27 September 2019	The Gatwick 'hum' in any particular location varies according to wind direction. It would therefore be appropriate to measure the background (L90) noise levels in upwind conditions to ensure a true background noise level. The ground noise propagation should then be calculated using a positive downwind scenario.	Wind direction has been considered carefully in the ES as explained in Appendix 14.9.3: Ground Noise. Easterly and westerly operations are modelled separately. Initially downwind propagation was considered in all modelling cases, but this provided baseline levels above the measured baseline that were too conservative. This is because some receptors cannot always be downwind of some noise sources because the runway changes direction. To model wind effects more accurately, a realistic average wind speed and direction was used for westerly operations, and a different realistic average wind speed and direction was used for easterly operations. Different wind speeds and directions were also modelled for day and night.
Horsham District Council	27 September 2019	The 'end-around' taxiways and the new Juliet holding spur need to be examined in detail as these both bring taxiing aircraft closer to existing residents. The use of bunds has been mentioned but full calculations and assumptions would need to be published to demonstrate their effectiveness.	Noise from end around taxiways has been predicted and assessed in Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1). A new bund has been designed and ground noise levels have been modelled with it in place, as reported in Section 14.8 and 14.9 and in **ES Appendix 14.9.3: Ground Noise Modelling** (Doc Ref. 5.3).
Horsham District Council	27 September 2019	The increase of aircraft using Gatwick will result in an increase in maintenance and ground runs. The location for future ground runs needs to be agreed and the impact calculated when compared to the present location and frequency.	Noise levels from ground runs with the Project have been predicted and assessed, see Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and **ES Appendix 14.9.3: Ground Noise Modelling** (Doc Ref. 5.3).
Horsham District Council	27 September 2019	There has already been an increase in road traffic 'spillage' from the main highways to the side roads and country lanes. Even though the total noise will not be comparable to the main roads, the increase in noise can be large and proportionally more disturbing due its close proximity to residents and due to the fact it is made up of multiple 'events' rather than a general hum. Therefore, an assessment should be made of traffic flows on local roads and how this traffic is associated with Gatwick and how it can be mitigated.	The ES provides detailed assessment of road traffic noise impacts during the construction and operational phase, see Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and **ES Appendix 14.9.4: Road Traffic Noise Modelling** (Doc Ref. 5.3).
Horsham District Council	27 September 2019	The use of sound insulation to mitigate noise is a last resort and needs to include the windows, doors and the roof, which is often the weak spot in a house. In addition, sound insulation is only effective when the windows are closed. During summer months windows have to be kept open to deal with overheating. This will expose	An enhanced noise insulation scheme is proposed, see Section 14.8 **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1)

Consultee	Date	Details	How/where taken into account in ES
		residents to the harmful effects of noise, therefore, to truly mitigate against the harmful effects of noise, additional forms of ventilation are required. Natural forms of ventilation like acoustic louvres are more sustainable and visually acceptable. They are however less effective with very high noise levels at which point mechanical ventilation will be required. Any mitigation scheme will be expected to offer all of these options.	and the separate noise insulation and home relocation assistance schemes **ES Appendix 14.9.10: Noise Insulation Scheme** (Doc Ref. 5.3). It includes acoustic windows, treatments to upstairs bedroom ceilings if necessary for the worst affected homes and offers of acoustic ventilators to allow windows to remain closed in warmer conditions.
Horsham District Council	27 September 2019	It is expected that there will be a lot of night-time working creating noise during the only period of relative quiet that the nearest residents will have. It is expected that this additional burden places on these residents will be considered in detail and all forms of potential mitigation explored and applied. If noise levels are very high or during periods of very hot weather where windows have to be opened for ventilation, then alternative temporary accommodation should be available.	The assessment of construction noise and vibration is provided in Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1). Construction noise has been modelled from the largest teams of plant expected to carry out all the main works, and has been assessed cumulatively as a worst case at this stage. Day and night periods are assessed separately. See **ES Appendix 14.9.1: Construction Noise Modelling** (Doc Ref. 5.3). The assessment has been further refined for the ES. A full package of mitigation is proposed in line with that used other major projects that require work at night, see Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1). Noise insulation would be offered for qualifying buildings. Noise insulation, or if other measures are not possible, temporary re-housing would avoid residents being significantly affected by levels of construction noise inside their dwellings. The assessment reported in ES provides an estimate of the buildings that are likely to qualify for noise insulation or to qualify for temporary rehousing, if any.
Horsham District Council	27 September 2019	It is accepted that residents will experience limited vibration from the construction works on site but the off-site construction work on the road network is much closer to residents and needs to be assessed.	Noted, vibration from offsite construction work has been assessed and reported in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Kent County Council	1 October 2019	Paragraph 7.8.7 states *"any increases in noise will be due to the increased number of flights on the northern runway"*. This is not the case, as releasing capacity on the main runway will allow for additional movements by larger aircraft. Increased demand for long haul flights and larger aircraft (such as Airbus A380s) will generate a further increase in noise on the main runway compared to current operations. Combined with increases in noise from the use of the northern runway, it is imperative that noise impacts from use of both runways are considered appropriately.	Noted, the noise assessment considers noise from all flights generated by the increased capacity of the Project. See **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Kent County Council	1 October 2019	It is imperative that the study area of the noise assessment is extended to include Kent, in particular the urban area of Tunbridge Wells, which regularly experiences overflight of Gatwick aircraft at less than 7,000 ft.	The noise assessment reported in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) does report noise levels in part of Kent, and it reports overflights up to 7,000 ft above levels including over Tunbridge Wells.
Kent County Council	1 October 2019	Overflight metrics should also include the anticipated growth at Heathrow as a result of a third runway. Kent is overflown by aircraft from a range of airports in the South East and it is imperative that any consideration of overflight represents a true reflection of the impact on communities.	In **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) quantifying overflights in the current base case, all flights have been analysed including flights from Heathrow. It is not possible to consider in detail the airspace change that will be required for a third runway at Heathrow because the design of that airspace would be developed separately to a different programme,

Consultee	Date	Details	How/where taken into account in ES
			and overflights would be assessed and reported as part of that assessment.
Mid Sussex District Council	1 October 2019	The temporal scope of all noise and vibration topics should be set out in the ES.	Noted. The ES considers noise and vibration from the onset of construction through to opening of the northern runway (assumed 2029) to the runway design year (2038) and on to 2047, which is 15 years after opening of the highway improvements in 2032.
Mid Sussex District Council	1 October 2019	The Study Area and the method for defining it should be clearly set out in the ES.	See Section 14.5 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1). The study area for noise and vibration effects includes all receptors that may experience potential adverse impacts. For example, for some air noise metrics, this area extends more than 20 km from the airport and overflights are considered beyond this. Whereas for ground noise, the nearest receptors around the airport have been assessed, because at greater distances the impacts would be lower. This approach has ensured that the most critical receptors have been considered.
Mid Sussex District Council	1 October 2019	The ES should clearly describe the approach taken with regard to baseline monitoring that informs the assessment.	See Section 14.6 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Mid Sussex District Council	1 October 2019	The Airports National Policy Statement (ANPS) is an important and relevant consideration for the expansion project. The key points set out in the ANPS relating to noise should be set out in the ES along with information on how they have been responded to.	See Section 14.2 which includes Table 14.2 that summarises the main ANPS requirements and how they have been addressed.
Mid Sussex District Council	1 October 2019	The assessment should consider the requirements of the Noise Policy Statement for England and the need to establish LOAEL and SOAEL. In addition, the Unacceptable Adverse Effect Level (UAEL) should be defined and assessed.	LOAELs and SOAELs for air, ground, traffic and construction noise are described in Section 14.4 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1). No Observed Effect Levels (NOEL) are referred to in the NPSE, but since only effects above the LOAEL require mitigation, a NOEL standard is not required for EIA purposes. UAELs are not mentioned in the NPSE. The Gatwick modelling shows zero population counts for air noise contours above the Heathrow UAELs $L_{eq\ 16\ hr}$ 71 dB and $L_{eq\ 8\text{-}hour}$ 66 dB.
Mid Sussex District Council	1 October 2019	The ES should clearly set out its methodology for assessing potential effects from construction noise, construction traffic vibration or noise emissions from airport operations/plant.	The approach to assessment is set out in Section 14.4 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1), with the assessment of construction noise and vibration provided in Section 14.9.
Mid Sussex District Council	1 October 2019	The ES should consider cumulative effects due to other committed developments within the Area of Influence.	An assessment of the cumulative noise impacts is provided in Section 14.12 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Mid Sussex District Council	1 October 2019	Consultation specific to the DCO application should be undertaken.	The Local Authority Noise Topic Working Group has met to discuss the methodology used in the ES. See Section 14.3 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Mid Sussex District Council	1 October 2019	Air noise mitigation covered in the ANPS should be referenced, where relevant, and responded to in the ES. Specifically, a Noise Envelope (paragraph 5.60 of the ANPS) should be part of the DCO application.	Noise mitigation referred to in the Airports NPS is addressed in the ES, see Section 14.8 of **ES Chapter 14: Noise and Vibration** (Doc

Consultee	Date	Details	How/where taken into account in ES
			Ref. 5.1). A Noise Envelope is proposed, see Section 14.8 and **ES Appendix 14.9.5: Air Noise Envelope Background** (Doc Ref. 5.3).
Mid Sussex District Council	1 October 2019	The ES should consider the following sources of potential noise or vibration effects or provide additional justification for scoping them out: ▪ off-site construction noise and vibration; ▪ construction traffic vibration; and ▪ noise and vibration from potential increased train/shuttle movements.	Vibration from construction plant and construction traffic has been assessed in the ES. In accordance with the latest Design Manual for Roads and Bridges (DMRB) guidance, vibration during operation of the highway is scoped out. The approach to assessment is set out in Section 14.4 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1), with the assessment of construction noise and vibration provided in Section 14.9. Three periods of peak construction traffic have been assessed in the ES. Construction noise has been modelled from the largest teams of plant expected to carry out all the main works, and has been assessed cumulatively as a worst case at this stage. See **ES Appendix 14.9.1: Construction Noise Modelling** (Doc Ref. 5.3).
Mid Sussex District Council	1 October 2019	The assessment of ground noise should consider noise from training activities at the relocated fire training ground and use of APUs or ground power units (GPU) for aircraft at stands.	Noise from APU and GPU usages is modelled and assessed in the ES. Noise from the relocated fire training ground has also been assessed in the ES.
Mid Sussex District Council	1 October 2019	The assumption that no change occurred between 2016 and 2018 in baseline data needs to be validated if it is to be relied upon.	Air traffic at Gatwick changed very little between 2016 and 2019: Average summer 16 hour day ATMs reduced by 0.6% from 771 to 766 and average summer night traffic was unchanged at 127 ATMs. Similarly, road traffic levels of local roads in general changed little in this period. Therefore, it is reasonable to assume that ambient noise levels in 2018 and 2019 were very similar to those measured in the 2016 baseline survey.
Mole Valley District Council	30 September 2019	Paragraph 7.8.8 – The Council believes that using summer 2018 noise contours as the baseline is insufficient, even if used alongside the Noise Preferential Routes. Gatwick Airport is at near capacity during the summer months on which these contours are based, whereas much of the growth of the airport will be achieved by peak spreading outside of the busiest periods (as per Diagram 4.5.1). It is therefore necessary to produce L_{den} and L_{night} contours that are based on flights year-round and which therefore take into account flights outside the busy summer period. We therefore request that summer L_{Aeq} noise contours, year-round L_{den} and L_{night} contours and the Noise Preferential Routes are used as the baseline. Additionally, World Health Organisation guidelines should be taken into account and noise should therefore be modelled from 45 dB L_{den} for average noise exposure, and 40 dB L_{night} for night noise exposure.	Diagram 4.5.1 of the **ES Appendix 6.2.1: Scoping Report** (Doc Ref. 5.3) indicates clearly that the highest numbers of flights would continue to occur in the months of June to September as captured by the Leq noise modelling period form from 16 June to 15 September. This is confirmed by current forecasts (see **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1). Air noise is assessed as adverse if future levels exceed absolute levels (ie LOAELs) which are defined by the DfT in terms of 92 day summer contours. Furthermore, in the UK the dose/response for aircraft noise is measured using summer season noise levels, not annual averages which would dilute levels. The research underpinning the UK's choice of the summer Leq contours looked at the performance of annual metrics and concluded that there was no evidence to support they correlated better with annoyance than $L_{Aeq,16h}$ (see for example CAA CAP1506 2021 §8.8). The dataset for this research included Heathrow, which has a less seasonal traffic profile. This notwithstanding, annual L_{den} and L_{night} contours are also provided for baseline and with Project conditions in

Consultee	Date	Details	How/where taken into account in ES
			Section 14.6 and 14.9 to illustrate noise changes over the whole year including the winter months. The assessment of air noise follows CAA guidance as in CAP 1616: ▪ $L_{eq,\ 16\ hour\ day}$ 51 to 72 dB; and ▪ $L_{eq,\ 8\ hour}$ night 45 to 72 dB. L_{den} contours are also provide from 55dB and above in 5 dB steps and L_{night} contours from 45 dB upwards in 5 dB steps. Section 14.2 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) discusses the WHO guidelines.
Mole Valley District Council	30 September 2019	Paragraph 7.8.24 – Whilst it is understood that the specific study area for noise and vibration effects cannot be determined until noise levels resulting from the development have been modelled, the Council would request that both the primary and secondary noise metrics are used to determine this area so that noise levels, frequency of noise events and increase in overflight are considered.	Agreed.
Mole Valley District Council	30 September 2019	Paragraph 7.8.27 – Any likelihood in increase in the number of aircraft go-arounds should be assessed through the EIA, as these events can have great noise impacts on local communities.	Aborted landings result in 'go-arounds', the standard procedure that occurs when an arriving aircraft aborts landing during the final stages of approach. They occur most often as a result of a departing aircraft or preceding arriving aircraft not fully vacating the runway ahead of a landing aircraft. On these occasions the pilot takes averting action under a defined standard missed approach procedure. On westerly operations, typically these aircraft abort landing at low level, climb to 3,000 feet and loop round over Crawley to make a fresh approach to the runway. However, the CAA do not model noise from go-arounds at UK airports because their effect on the resultant noise contours is not significant. In the busy summer season in 2019 there were approximately three go-arounds each day. 85% of these occurred within the 16 hour day and evening period, with 15% at night (23:00-07:00 hours). The Project includes new exit/entrance taxiways, plus the end around taxiways, and has been designed so that the numbers of go-arounds do not significantly increase. As such, noise disturbance from go-arounds is not expected to increase.
Mole Valley District Council	30 September 2019	Paragraph 7.8.27 – It is expected that much of the construction of the development will take place at night, the only period of relative quiet for residents near to the airport. A full assessment of the noise impacts from construction on local communities, as well as exploration of potential mitigation measures, is therefore necessary.	The construction noise assessment considers day and night-time noise impacts. See **ES Appendix 14.9.1: Construction Noise Modelling** (Doc Ref. 5.3).
Mole Valley District Council	30 September 2019	Paragraph 7.8.31 – When preparing N65 Day and N60 Night contours, all aircraft over the respective decibel noise level should be included, regardless of their altitude.	Noted, no flights above any altitude are excluded in the **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) noise modelling.
Mole Valley District Council	30 September 2019	Paragraph 7.8.36 – The regular use of the Emergency Runway will bring departures 210 metres closer to communities to the north of the airport. The noise impact on these communities should be fully assessed as part	Noted, the **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) assessment considers this in detail using a variety of noise metrics as discussed above, including L_{max} 60 and L_{max} 65 dB footprints.

Consultee	Date	Details	How/where taken into account in ES
		of the EIA by modelling the noise footprint of departures of Code C aircraft from both runways in each runway direction.	
Mole Valley District Council	30 September 2019	Paragraph 7.8.40 – Reconfiguration of the Juliet taxiway and creation of end-around taxiways will bring taxiing aircraft closer to local communities. The potential noise impacts of this should be fully assessed, as well as the effectiveness of any mitigation measures proposed such as bunds. Similarly, an increase in the number of aircraft using Gatwick will bring an increase in maintenance and ground runs, likely in differing locations to present. The impact of this should be fully assessed against the present locations and frequency.	Noise from end around taxiways has been predicted and assessed in Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1). Noise from ground running has also been modelled and assessed. See Section 14.9 of **ES Chapter 14: Noise and Vibration** and **ES Appendix 14.9.3: Ground Noise Modelling** (Doc Ref. 5.3). A new bund has been designed and ground noise levels have been modelled with it in place, as reported in Section 14.8 and 14.9 **ES Chapter 14: Noise and Vibration** and **ES Appendix 14.9.3: Ground Noise Modelling**.
Mole Valley District Council	30 September 2019	Paragraph 7.8.44 – An increase in cargo throughput at the airport will lead to an increase in heavy goods vehicle movements, of which the noise impact should be assessed as part of any road traffic noise assessments. Furthermore, the noise impacts of an increase in airport trips on rural roads must be assessed through the EIA process.	Road traffic noise has been modelled and assessed for the year of opening and up to 15 years after opening of the highway improvements as required by the DMRB. This has been based on road traffic modelling which in turn is based on the forecast for all future aircraft using the airport including cargo. Road traffic noise has been modelled in a 3-D noise model for the area in the vicinity of the new road scheme. It has also been modelled in terms of change in Basic Noise Level at 10 m from roads unaltered by the Project but included in the highway model, including rural roads away from the airport. See Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and **ES Appendix 14.9.4: Road Traffic Noise Modelling** (Doc Ref. 5.3).
Mole Valley District Council	30 September 2019	Paragraph 7.8.52 – The Council is of the opinion that L_{Aeq} contours should not be used to inform the areas eligible for mitigation, as these contours do not account for an increase in overflight and therefore do not accurately represent all of the residents and communities that are affected by aircraft noise. Instead, assessments should be undertaken in all areas overflown by aircraft associated with Gatwick.	The ES provides an assessment of the numbers of overflights in all areas overflown (at least once every 24 hours on an average summer day) by aircraft associated with Gatwick. This used a circular study area with a diameter of 70 miles centred at Gatwick Airport. Paragraph 7.8.52 of **ES Appendix 6.2.1: Scoping Report** (Doc Ref. 5.3) notes: *The final bullet point of the Aviation 2050 consultation proposes that where an airspace change leads to 'significantly increased overflight, to set a new minimum threshold for an increase of 3dB L_{Aeq}, which leaves a household in the 54dB $L_{Aeq\ 16hr}$ contour or above', noise insulation should be offered in some form.* The ES proposes a noise insulation scheme based on Leq noise levels, offering two levels of noise insulation above L_{eq} 54 dB so as to priorities noise mitigation for those most affected by noise.
Reigate and Banstead Borough Council	27 September 2019	The Council has no noise and vibration expertise and instead relies upon Crawley Borough Council to provide noise and vibration expertise. We therefore support comments provided by Crawley with regards to noise and vibration.	Noted, see responses to Crawley Borough Council comments above.
Reigate and Banstead Borough Council	27 September 2019	In the list of policies and legislation for noise and vibration, the following policy is omitted: ▪ DMP Policy OSR1 *"Urban Open Space"*	Noted.

Consultee	Date	Details	How/where taken into account in ES
Reigate and Banstead Borough Council	27 September 2019	Following the adoption of the DMP, 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. Also, following the adoption of the DMP, saved Borough Local Plan Policy Hr19 *"Development Affected by Noise"* should be removed from Paragraph 7.8.1 of the EIA Scoping Report.	Any subsequent changes in emerging planning policy have been taken into account within the ES.
Reigate and Banstead Borough Council	27 September 2019	We are satisfied that Local Green Spaces and areas identified as Quiet Areas are proposed to be scoped out of the assessment as there are non-such areas within our borough. We however have a local designation of Urban Open Space (DMP Policy OSR1) (green open space areas in urban areas which are highly valued for a number of different purposes including their opportunity for recreation and visual contribution to the character of an area) which we consider should be taken into consideration in the assessment of noise and vibration impacts.	It is noted that the description of the Urban Open Space given does not include areas being valued for quiet or noise, as is the case for Quiet Areas that are within the scope of the assessment. Noise impacts on users of the Riverside Garden Park have been assessed in consultation with RBBC and are reported in the ES, including **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Reigate and Banstead Borough Council	27 September 2019	The Council welcomes consideration of the potential overflight of planes in the scope of the EIA as the borough is severely impacted by overflight. We note that the potential for overflight of the borough as a result of airspace modernisation programmes may increase and therefore, whilst we appreciate that the results from the airspace modernisation programme are unknown at this time, we consider that they should be taken into consideration at some point in the DCO process should it proceed given that they will be in operation at the time of the proposed routine use of the northern runway.	As noted, the results of the FASI-South appraisal are not known at this time. The programme of that work has been delayed by the global pandemic and is not likely to be available to allow modelling of noise from new routes within the timescale of the DCO application. The FASI-South appraisal will assess the noise impacts of these routes. Further details of FASI-South are provided in **ES Chapter 4; Existing Site and Operation** (Doc Ref. 5.1).
Reigate and Banstead Borough Council	27 September 2019	We also consider that the assessment of noise and vibration should give consideration to any emerging airspace modernisation programmes required for the dual runway operation. Whilst we note that Paragraph 7.8.7 of the EIA Scoping Report states that *"any noise impacts of the Project will be the result of increases in noise due to the increased number of flights on the northern runway, rather than new noise impacts over areas previously unaffected"* and that *"this will therefore avoid the noise impacts often associated with new flight paths"* at the most recent Socioeconomics Topic Working Group facilitated by GAL it was stated by GAL representatives that the routine use of the northern runway in addition to the 'main' runway may require an airspace change. The Council would therefore welcome clarity as to whether an airspace change is required and if so, expects consideration.	As explained in Section 14.8 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and **ES Appendix 14.9.2: Air Noise Modelling** (Doc Ref. 5.3), aircraft using the altered northern runway would use the same flight paths as currently flown from the existing northern runway but displaced by some 12 metres further to the north (equating to about a third of a wingspan of the average sized aircraft). The main and northern runway flight paths run parallel to each other maintaining the track of the respective extended runway centrelines. At the point that aircraft begin to turn to the north or south (between 5 and 16 km from the runway) the main and northern runway flight paths merge. Flights from both runways are included in the assessment, and the forecast allows for growth in operations of larger aircraft from the main runway. The numbers of movements are set out in the Table 14.7.1 in Section 14.7 **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1). An airspace change is not required for the Project. Proposals for airspace change known as FASI-South are proposed independently of the Project – details are provided in **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1).
Reigate and Banstead Borough Council	27 September 2019	We also consider that the impact of the proposed Heathrow early growth (25,000 ATMs from 2022 onwards) should be taken into consideration in the assessment of noise and vibration given that Heathrow planes also overfly Reigate & Banstead.	Heathrow overflights are included in the baseline used to assess change in overflights. It is not possible to consider in detail the cumulative effect that could occur with a third runway at Heathrow

Consultee	Date	Details	How/where taken into account in ES
			due to the lack of detail of the likely timing of that project coming forward. Further details of the approach relating to Heathrow are provided in **ES Appendix 4.3.1: Forecast Data Book** (Doc Ref. 5.3).
Reigate and Banstead Borough Council	27 September 2019	The Council notes - and welcomes - GAL's proposal to undertake additional noise assessments at the Riverside Garden Park and in the vicinity of the North and South terminals. We however note that any current assessments would be impacted by the ongoing M23 Smart Motorway improvements and would welcome clarity as to what assumptions will be made regarding the impact of the M23 Smart Motorway improvements on the assessment of noise and vibration on land in the Riverside Garden Park and land in the vicinity of the North and South Terminals.	The change in road traffic noise levels in the Riverside Garden Park arising from the Project has been modelled, assessed and mitigation has been included in the scheme. See Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1). A baseline noise survey was carried out in the park to better understand its noise sensitivity and users (see **ES Appendix 14.9.4: Road Traffic Noise Modelling** (Doc Ref. 5.3)). The noise levels used to assess the impacts on the park, in particular the changes to be expected, are generated by the noise model based on the traffic model for traffic in the relevant assessment year, eg 2032 and 2047, so are not affected by short term noise changes that could arise from the M23 Smart Motorway improvements.
Reigate and Banstead Borough Council	27 September 2019	We note that paragraph 7.8.10 of the EIA Scoping Report states that *"the baseline for the air noise assessment will be the 2018 summer season (16 June to 15 September)"*. We also note that paragraph 7.8.7 of the EIA Scoping Report states that *"in 2018 the northern runway was used by 3,534 flights"*. We would therefore welcome clarity as to whether any assumptions will be made to take into consideration the use of the northern runway in the baseline air noise assessment.	2019 is now the baseline year, in which there were 2,842 flights on the northern runway that have been taken into account in the noise modelling, see **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Reigate and Banstead Borough Council	27 September 2019	The Council questions whether the scope of the assessment should also take into consideration noise metrics during the shoulder periods. We note that paragraph 7.8.32 of the EIA Scoping Report states that all noise metrics used to assess the potential impact of increased flights on air noise will relate to the 92 day summer period (16 June to 15 September) as conventionally in the UK this represents the busiest, and hence noisiest, season but note that through the Project, only minor additional movements are expected during the summer periods and that the majority of growth is expected within the shoulder periods.	Diagram 4.5.1 of the **ES Appendix 6.2.1: Scoping Report** (Doc Ref. 5.3) indicates clearly that the highest numbers of flights would continue to occur in the months of June to September as captured by the Leq noise modelling period form from 16 June to 15 September. This is confirmed by current forecasts (see **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1). Air noise is assessed as adverse if future levels exceed absolute levels (ie LOAELs) which are defined by the DfT in terms of 92 day summer contours. Furthermore, in the UK the dose/response for aircraft noise is measured using summer season noise levels, not annual averages which would dilute levels. However, annual L_{den} and L_{night} contours are also provided for baseline and with Project conditions in Section 14.6 and 14.9 **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) to illustrate noise changes over the whole year including the winter months.
Reigate and Banstead Borough Council	27 September 2019	We note that paragraph 7.8.38 of the EIA Scoping Report states that *"a comprehensive noise survey of aircraft taxiing noise levels has recently been carried out (March-May 2019) and the results of this will feed into the ground noise model"*. Whilst this time period relates to some of the shoulder period in which the greatest anticipated growth is expected, we note that this doesn't take into consideration the remainder of the shoulder period which is expected to see the greatest increase in air traffic movements nor the summer season. We therefore question whether the scope of the assessment should also take into consideration noise metrics during	The ground noise survey in 2019 is reported in **ES Appendix 14.9.3: Ground Noise Modelling** (Doc Ref. 5.3). Its purpose was not to measure total levels of ground noise at noise sensitive receivers, but rather to measure the source noise levels of aircraft taxiing for inputting into the ground noise model that computes the propagation of noise from each source to each receiver and sums up all the aircraft in a given time period.

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		the remainder of the shoulder period and the summer period in order to fully understand – and hence mitigate – the potential ground noise impacts through the routine use of the northern runway.	
Reigate and Banstead Borough Council	27 September 2019	In terms of road traffic noise during construction, we note that paragraph 7.8.44 of the EIA Scoping Report states that *"the assessment of construction traffic noise will be based on a period of peak traffic flow"*. We do not consider that this is sufficient given that paragraphs 5.3.17 and 5.3.18 of the EIA Scoping Report state that the greatest construction will be scheduled during the night-time period in close proximity to residential areas (ie during a noise sensitive time outside of peak traffic flow).	Construction noise has been modelled from the largest teams of plant expected to carry out all the main works, and has been assessed cumulatively as a worst case at this stage. See **ES Appendix 14.9.1: Construction Noise Modelling** (Doc Ref. 5.3). The assessment has been refined for the ES. Three periods of peak construction traffic have been assessed in the ES.
Reigate and Banstead Borough Council	27 September 2019	We note that through the routine use of the northern runway GAL is anticipating a growth in cargo movements. Whilst we note that the airport previously had much higher cargo throughput and that the facilities still existing on-site to accommodate this throughput, we understand that GAL no longer has access to these facilities as they have been sold to SEGRO. We would therefore seek clarity as to whether the scope of the assessment will take into consideration the potential noise impacts of increased HGV movements to cargo facilities on/ off-site.	The road traffic noise model uses the results of the road traffic model that accounts for all trips generated by the airport with the Project in operation as described in Sections 4 and 5 of the ES.
Reigate and Banstead Borough Council	27 September 2019	With regards to assumptions made to assess the potential impact of noise during the operational phase, we note that GAL are proposing to assess the night noise component of the planned development assuming that the current Department for Transport's night movement quota is in place when the Project is completed and that the northern runway will only be used for Code C or smaller aircraft. These assumptions will need to be conditioned as part of the DCO for future operations.	That is the basis of the assessment. A noise envelope is proposed to give certainty over future noise levels. See **ES Appendix 14.9.7: The Noise Envelope** (Doc Ref.5.3).
Reigate and Banstead Borough Council	27 September 2019	The Council would welcome clarity as to whether the proposed mitigation associated with the construction phase via a s.61 Environmental Health Application will form part of the DCO application.	The Outline Code of Construction Practice (**ES Appendix 5.3.2: Code of Construction Practice** (Doc Ref. 5.3)) commits to the Section 61 process when full details of noise mitigation will be made available for the council to approve before work begins.
Reigate and Banstead Borough Council	27 September 2019	The Council would also welcome clarity regarding the proposed location, design and height of the proposed new noise bund/ buffer.	See Section 14.8 of the **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Reigate and Banstead Borough Council	27 September 2019	The Council welcomes consideration of the enhancement of the Noise Insulation Scheme. In line with Crawley Borough Council's response, we consider that this should mirror or be better than Crawley Borough Council Local Plan Policy ENV11 *"Development and Noise"*.	Details of the enhanced Noise Insulation Scheme are provided in Section 14.8 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and **ES Appendix 14.9.10: Noise Insulation Scheme** (Doc Ref. 5.3)
Reigate and Banstead Borough Council	27 September 2019	Following the GAL-facilitated Noise Topic Working Group, we would welcome clarity as to whether a noise envelope will be used. We are concerned that if one is used based on L_{Aeq} that it will not properly assess the potential impact of increased overflight and consequently this will impact upon the scale of mitigation required/ proposed.	Yes, see **ES Appendix 14.9.7: The Noise Envelope** (Doc Ref. 5.3).
Surrey County Council	1 October 2019	The County Council is concerned that the FASI-South, which is part of the national Airspace Modernisation Strategy, has been scoped out of the assessment. The proposed DCO and FASI-South are directly related but at present the results of FASI-South and the final flightpaths cannot be predicted.	As noted, the results of the FASI-South appraisal are not known at this time. The programme of that work has been delayed by the global pandemic and is not likely to be available to allow modelling of noise from new routes within the timescale of the DCO application. The FASI-South appraisal will assess the noise impacts of these routes. Further details of FASI-South are provided in **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1).
Surrey County Council	1 October 2019	FASI-South will be designed on the basis that Heathrow Runway 3 and Gatwick Runway 2 both proceed. Although the current proposal would not, of itself, require changes to existing flightpath arrangements, flightpaths are very likely to change under the FASI-South review before the northern runway is completed. Consequently,	See above.

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		the areas covered by the noise contour bands for aircraft, which will be a key part of the assessment for the DCO, could change within the lifetime of the DCO project. New flightpaths could have a significant adverse impact on the quality of life of some communities and if there are newly affected areas or areas experiencing more overflights potentially negative health impacts.	
Surrey County Council	1 October 2019	It is recommended that the assessment provide an indication of the level of certainty attached to the air noise impact assessments where they are based on existing flightpaths and if possible explore any indicative alternative flightpaths, perhaps on a worst case basis, so that local communities and stakeholders are able to understand and develop an informed view of the likely environmental effects. Preferred design options for Gatwick's airspace change are anticipated in late Summer/Autumn 2020 before the DCO is expected to be submitted and the assessment process should take these into account.	The FASI-South programme has been delayed by the global pandemic and results are not likely to be available to allow modelling of noise from new routes within the timescale of the DCO application. The FASI-South air space change appraisal will assess the noise impacts of these routes. Further details of FASI-South are provided in **ES Chapter 4: Existing Site and Operation** (Doc Ref. 5.1).
West Sussex County Council		WSCC endorses the response from Crawley Borough Council regarding noise/vibration matters.	Noted.
West Sussex County Council		In reference to Table 7.8.3, the impact of the potential increased use of Crawley Goods Yard as a source of aggregate during the construction phase should be scoped in, particularly as operations may occur overnight when the noise environment is particularly sensitive.	Noted. This option was not chosen.
Wealden District Council	26 September 2019	The mitigation and monitoring section of the scoping report states that an adjustment of the flightpaths 12m further north is unlikely to require a formal 'airspace change process' to enable the dual runway operation and that a majority of flights would be 1,000 ft in the air before they leave the airfield. It is not satisfactorily clear whether an assessment of the length of potential noise disturbance has been taken account of, and the times of day that the noise disturbance will take place. This should form part of the scoping assessment. Wealden District Council are also concerned that the formalisation of night flight operations at Heathrow Airport will put pressure on Gatwick Airport to provide later or earlier flights that could impact residential amenity. Heathrow Airport should be assessed as an appropriate 'in combination' impact.	**ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) provides an assessment of the noise impacts expected from the Project based on noise modelling for operations in 2019, and in the base case and with the Project in 2029, 2032, 2038 and 2047. This accounts for the numbers of flights expected in each runway during the day and night. With regard to night flights, the DfT is consulting on night restrictions and it is assumed that these will remain in place with the Project thus limiting growth in night flights at Gatwick regardless of what may happen at other airports.
Waverley Borough Council	30 September 2019	The Air Noise Baseline for day and night, Figure 7.8.2 and 7.8.3, includes one site within the Borough at Alford where Air Noise Baseline for both day and night will be measured. The site between Ellen's Green and Oakwood Hill appears to be on the edge of the Waverley Borough boundary. The Council is concerned about potential noise impacts over a wider area, including other parts of Waverley Borough, and considers that these should be addressed in the Environmental Statement. This should also have regard to noise impacts at different times of the day.	**ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) provides an assessment of modelled levels of noise and the associated impacts expected from the Project based on noise modelling for operations in 2019, and in the base case and with the Project in 2029, 2032, 2038 and 2047. This accounts for the numbers of flights expected in each runway during the day and night and covers areas across the southern part of the Waverly District.
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.	Road traffic noise is assessed in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1).
Tandridge District Council	30 September 2019	The detailed comments made by Crawley Borough Council under this topic heading are endorsed. Of particular significance to this District (in relation to aircraft noise) is the fact that the use of the northern runway will bring departures 210 m closer to those communities on the north side of the airport, until they turn onto the relevant Standard Instrument Departure Routes within the Noise Preferential Route approximately 5-7 km beyond the end of the runway. This is likely to impact on residents and communities in the south western part of the District including Smallfield. Also, of significance for this District is the likely increase in the number of 'go-arounds'	Noted, see replies to Crawley Brough Council comments above. **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) provides an assessment of the noise impacts expected from the Project based on noise modelling for operations in 2019, and in the base case and with the Project in 2029, 2032, 2038 and 2047.

Consultee	Date	Details	How/where taken into account in ES
		(where a landing is aborted as a result of another aircraft failing to vacate the runway), which cause disturbance and anxiety due to their low altitude. This data also needs be presented as part of the ES.	Noise impacts in the Smallfields area and Tandridge District are quantified and mitigation is proposed. Aborted landings result in 'go-arounds', the standard procedure that occurs when an arriving aircraft aborts landing during the final stages of approach. They occur most often as a result of a departing aircraft or preceding arriving aircraft not fully vacating the runway ahead of a landing aircraft. On these occasions the pilot takes averting action under a defined standard missed approach procedure. Typically, these aircraft abort landing at low level, climb to 3,000 feet and loop round to make a fresh approach to the runway. However, the CAA do not model noise from go-arounds at UK airports because their effect on the resultant noise contours is not significant. In the busy summer season in 2019 there were approximately three go-arounds each day. 85% of these occurred within the 16 hour day and evening period, with 15% at night (23:00-07:00 hours). The Project includes 8 new exit/entrance taxiways, plus the end around taxiways and has been designed so that the numbers of go-arounds do not significantly increase. As such, noise disturbance from go-arounds is not expected to increase.
Tandridge District Council	30 September 2019	In terms of ground noise as a result of traffic, the impact of increased traffic on local roads needs to be fully assessed. A number of smaller roads and country lanes in this District, particularly in its south western corner, are used as alternative routes for airport related traffic (including for employees) and there is the potential for increased volumes of traffic to have a significant effect on noise levels close to residential properties.	Road traffic noise has been modelled and assessed for year of opening and up to 15 years after opening of the highway scheme as required by DMRB. This has been based on road traffic modelling which in turn is based on the forecast for all future aircraft using the airport. Road traffic noise has been modelled in a 3-D noise model for the area in the vicinity of the new road scheme. It has also been modelled in terms of change in Basic Noise Level at 10 metres from roads unaltered by the Project but included in the highway model including rural roads away from the airport. See Section 14.9 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and **ES Appendix 14.9.4: Road Traffic Noise Modelling** (Doc Ref. 5.3).