

## Heathrow Expansion DCO Consultation Response Noise

September 2019

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### 1. Overview

- 1.1 This paper sets out the response of the Mayor on noise to the statutory consultation by Heathrow Airport Limited (HAL) on its expansion proposals.
- 1.2 HAL is required to assess the likely noise impacts as a result of the scheme and it is a concern, previously raised, that HAL will only publish the flight path options – which would determine the actual noise impacts – after its Development Consent Order (DCO) application has been decided upon. This is clearly sub-optimal and undermines efforts to engender public trust in the process. This is particularly important given that HAL intends to use performance-based navigation (PBN) technology which allows for more precise flight paths. This creates possibilities for HAL to specify different areas to be overflown at different times of day or even on different days.
- 1.3 But if HAL is to proceed on this basis, then it is critical that the DCO assessment of impacts captures several potential worst-case scenarios. Regulation 12 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 requires preliminary environmental information to be information which ‘is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)’. Without certainty on the worst case scenarios for flightpaths, it is clear that HAL has not complied with this requirement and the associated mitigation proposals lack all credibility. Nor is it clear how this approach would comply with the Planning Inspectorate’s Advice Note 9.
- 1.4 It is fundamentally unjust that new technology which reduces aircraft noise should be appropriated by airports to allow growth – as well as being contrary to policy. The benefits of this technology should be shared with communities. By using a 2013 baseline, instead of a future non-expansion baseline – and one that includes technology developments unrelated to expansion – HAL is denying local communities the benefits they deserve and, from an environmental impact assessment perspective, understates significantly the adverse noise impacts of their proposals.
- 1.5 There are a number of other substantial concerns about what HAL is proposing, including a scheduled night noise ‘ban’ which will result in two to three times as many night flights compared to today, a noise envelope approach which would treat some aircraft as noiseless, questionable assumptions around fleet mix and steeper ascent and descent and limited noise metrics which will fail to capture the true extent of the noise impacts.

- 1.6 It is absolutely vital that the DCO provides a worst-case scenario in terms of noise impact. Even based on its own flawed assessment, HAL found that over a million people would be adversely affected by aircraft noise with expansion, around half a million of whom would be exposed for the first time. There can be no mistaking the severe noise impacts of a third runway and HAL has failed to show how these could even be credibly and comprehensively mitigated.
- 1.7 Further consultation will be required when the above defects are remedied given that this will likely lead to additional mitigation and a further number of statutory consultees. The Mayor would also refer to his response on the flawed “Environmentally Managed Growth” approach in this context.

## **2. Policy context**

- 2.1 The Mayor is strongly committed to protecting the health and wellbeing of all Londoners. The draft London plan, which is accepted as being a relevant and material policy in Appendix 2.1 of the PEIR, states that;

*“The Mayor will oppose the expansion of Heathrow Airport unless it can be shown that no additional noise or air quality harm would result, and that the benefits of future regulatory and technology improvements would be fairly shared with affected communities”.*<sup>1</sup>

- 2.2 This position is mirrored in paragraph 5.68 of the Airports National Policy Statement (NPS), which states:

*“Development consent should not be granted unless the Secretary of State is satisfied that the proposals will meet the following aims for the effective management and control of noise, within the context of Government policy on sustainable development:*

- *Avoid significant adverse impacts on health and quality of life from noise;*
- *Mitigate and minimise adverse impacts on health and quality of life from noise; and*
- *Where possible, contribute to improvements to health and quality of life”*

- 2.3 With the above policy stance in mind and after reviewing the material that HAL has made publicly available to date, the Mayor has areas of concern, as set out in this paper.
- 2.4 It is not clear that the noise assessment has taken account of other relevant policies including those within the new draft London Plan, the Mayor’s Transport Strategy and the London Environment Strategy. We would expect to see a full policy appraisal produced which clearly states how the proposed expansion would meet the relevant policy tests. Any proposal that does not appropriately address any significantly negative effects on the health and wellbeing of Londoners is a significant oversight and could not be accepted by the Mayor.

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<sup>1</sup> Draft London Plan, Policy T8: Aviation point D

### **3. Indicative vs actual flight paths**

- 3.1 As part of its preparation, HAL is required to assess the likely noise impacts as a result of the scheme. However, the flight path options – which would determine the actual noise impacts – are only to be determined as part of the separate Airspace Change Process (ACP).
- 3.2 HAL has made clear in the documentation that the DCO cannot and should not consent airspace change as this is a responsibility of the Civil Aviation Authority (CAA). This division of responsibility is understood. However, HAL has stated “At this time under the airspace change process, Heathrow has not developed or assessed any airspace options”<sup>2</sup>.
- 3.3 It remains a fundamental concern that the ACP has been drawn out by HAL to such an extent that the actual flight path options will only be published by HAL after its DCO application has been determined. The Mayor has raised this issue previously and maintains that it represents a significant barrier to a full understanding of the impacts as well as constituting a confusing and opaque approach to public engagement.
- 3.4 Nevertheless, even if HAL is to persist with such an approach, it is critical that the DCO assessment of impacts demonstrably captures several potential worse case scenarios in terms both of intensity, frequency and numbers exposed. In the absence of actual flight paths, HAL has selected test cases for the purpose of assessment within the DCO. In order to assess a reasonable worst case in the Preliminary Environmental Information Report (PEIR) and Environmental Impact Assessment (EIA) for the DCO, the ten test cases that have been selected from a snapshot from the ACP stage 1 must represent likely future airspace designs – also taking into account its proposed use of PBN. From the criteria set out in Volume 3 Chapter 17 Noise appendices it is unclear how these test cases can be demonstrated as worst case for the purpose of assessment.
- 3.5 Without a clear understanding of whether these indeed represent worst cases, it is impossible to understand whether the mitigation options proposed is credible and will be effective. More detail about the ten indicative test cases should be set out to enable this assessment. The onus is on HAL to set out how it will ensure that the noise impacts of the final scheme would be consistent with what it has presented at this stage.

### **4. Noise metrics**

- 4.1 There is no single noise metric that reflects all aspects of community perception of exposure. There are a number of different metrics including: single events, cumulative (e.g. annual), threshold based (e.g. amount of aircraft), population and many more possibilities that could be utilised to capture the noise exposure as a result of aircraft operations.
- 4.2 Longer-term cumulative average noise indicators, such as LAeq, are useful means to assess the evolution of the noise climate around an airport, because the impacts of

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<sup>2</sup> PEIR Volume 3 Chapter 17 Noise and Vibration Appendices para 2.2.2

operational changes are clearly visibly.

- 4.3 However, for Heathrow expansion, the use of averaging noise metrics above for assessment is insufficient and has the potential to mislead the public. There are concerns that using averaging metrics coupled with HAL's proposals for PBN with periods of "respite" would mask the true impacts experienced by certain receptors. These different flightpath permutations that PBN enables require a broader suite of metrics to be deployed, so as to fully reflect the noise impacts in a way that an averaging metric (such as Lden or LAeq) can do only partially.
- 4.4 To be clear, the risk is that a focus entirely on average noise metrics could encourage use of PBN in such a way that different areas were exposed to very significant noise, albeit for specific time periods – so that when averaged out alongside periods without substantial overflights, the true impacts would be masked – and many such residents would appear, from the metrics, not to suffer significant noise exposure.
- 4.5 Best practice from other European countries also highlights the value in using a combination of noise thresholds for different purposes. For example, Switzerland uses a 55 dB(A) LAeq,16 for the daytime to determine noise envelopes, but also uses a 50 dB(A) LAeq,16 for the daytime to identify aircraft noise mitigation measures. Austria uses a similar strategy where they have a 65 dB(A) Lden and 55 dB(A) Lnight limit for EIAs and action plans, but also publish a 45 dB(A) Lden and 40 dB(A) Lnight for informational purposes and to identify aircraft noise mitigation measures.
- 4.6 Although HAL explains that it does not deviate from the UK policy regarding the noise levels, this should not prevent it going beyond if the full impacts are to be captured. It remains important that the PEIR provides information on areas with lower noise level in order to give a holistic view of which areas or people will be affected given the increase in air transport movements (ATMs) and the new runway operation. Given the density of residential areas in London, it is likely that thousands of people will be exposed to aircraft noise for the first time, even if at comparatively lower levels than those living in close proximity to the airport. It is incumbent on HAL to fully and transparently set out this broader impact. This approach is consistent with the WHO advice to map out and mitigate the noise impact for areas falling within the 45 dB(A) Lden and the 40 dB(A) Lnight contours.
- 4.7 Therefore, it is absolutely essential that a combination of metrics be used to provide a complete picture of the potential noise impacts, underpinning clear, transparent and meaningful communication of those impacts to local communities.
- 4.8 The Mayor would note that the suggested approach will necessarily have an effect on the extent of those who may have a "relevant claim" for the purposes of the Planning Act 2008. It is therefore imperative that once this aspect is remedied, a full statutory consultation is carried out so any newly identified persons, in addition to existing consultees, can be consulted about the adverse impact they can expect.

## **5. Night noise 'ban'**

- 5.1 It is deeply regrettable that despite the deep concerns raised on several occasions, HAL continues to downplay the negative impacts of its proposed night noise regime including the scheduled 'ban'.
- 5.2 The official night period defined by UK policy is from 11pm to 7am<sup>3</sup> and the impacts of aircraft movements in this period and the sleep disturbance they cause have significant consequences for quality of life and health. The existing night quota period lasts from 11.30pm to 6am and together with the voluntary ban on scheduled flights between 11pm and 4.30am effectively limits scheduled flights between 4.30 and 6am to around 16 per night. After 6am there are no restrictions on the two runways.
- 5.3 The scheduled night flights 'ban' that HAL is proposing would last from 11pm to 5.30am. While this would remove the handful of flights that currently operate between 4.30 and 5.30am it would also allow HAL to quickly ramp up movements after 5.30am and make full (or close to full) use of all three runways at an expanded Heathrow. The net result would be two to three times the number of night flights compared to Heathrow today.
- 5.4 It is also noting that HAL's proposed scheduled night flights 'ban' would place no restrictions on the unscheduled movements which typically occur after 11pm when the airport is recovering from disruption earlier during the day.
- 5.5 In short, the night noise regime being proposed by HAL would have very severe noise implications for local communities, with consequences for health outcomes. HAL must fully assess those impacts and take the necessary steps to address them. As a minimum, HAL should ensure that the total number of scheduled night flights, between 11pm and 7am, does not increase with expansion – and ideally seek a reduction.

## **6. Quota count noise envelope**

- 6.1 HAL is proposing a noise envelope approach based on the quota count (QC) system. The QC system classifies aircraft by the amount of noise they generate and it has been used at Heathrow to restrict flights by noisier aircraft, primarily at night.
- 6.2 This is a concern because 'noise budget'-based systems as the QC are not intended to form noise envelopes. Noise certification data, extracted from measurements on fixed points, allows the opportunity to make a fair comparison between aircraft types. Noise envelopes must capture the noise impact as a result of a change in the entire operation, which is more than just the aircraft noise certification data. As a result, noise budget metrics are reliable metrics to identify the aircraft noise performance and how they evolve over time. For example, the noise budget system in the Netherlands (Hoeveelheid Geluid, literally 'quantity of noise') uses noise certification data, similar to the QC system, but it is only being used to record the noise performance in a particular year. It is not used to design noise envelopes and there are no limits applied on this

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<sup>3</sup> Future Runway Operations, Figure 4.2

metric.

- 6.3 Concerns about the QC system are exacerbated by the expected emergence of aircraft that are zero-rated under the QC system. But a zero QC rating still equates to 84 EPNdB (effective perceived noise in decibels). This is comparable to a diesel truck travelling at 50mph 50ft away. This constitutes a significant noise associated with aircraft movements – yet a noise envelope designed on this basis could allow an unlimited number of such movements, fundamentally undermining what a noise envelope should be trying to achieve.
- 6.4 It is not credible for HAL to persist with a noise envelope based the QC system, if it cannot provide evidence that it could indeed fully capture the noise impacts..

## **7. Flight slope gradients**

- 7.1 The increased number of operations related to the expansion of Heathrow Airport will inevitably impact the noise footprint. To prevent adverse effects from noise on health and quality of life, the DCO proposes several mitigating noise control measures, including relating to the angle of ascent and descent.
- 7.2 An increased Instrument Landing System (ILS) approach (descent) gradient higher than the regular three degrees is proposed for the purpose of reducing aircraft noise<sup>4</sup>. However, evidence<sup>5,6</sup> suggests that increased glide path angles do improve noise footprints. Moreover, implementation of such an approach angle is a deviation from the International Civil Aviation Organization (ICAO) Pans Ops regulations which state that descent gradients steeper than three degrees should only be used for obstacle avoidance such as terrain. It is incumbent on HAL to demonstrate how it could implement this proposed mitigation while complying with international regulations and its likely effectiveness.
- 7.3 Another suggested mitigating measure relates to implementation of Continuous Climb Operations (CCO) with minimum climb gradient of 5%<sup>7</sup>. However, this might result in aircraft having to depart with a higher thrust setting than normal to obtain the stated climb gradient. Although noise footprints could reduce further away from the airport, the increased climb thrust might cause a significantly larger noise footprint in the proximity of the airport, as well as resulting in increased air pollution and carbon emissions.
- 7.4 Another note of caution is that large, heavy (and typically noisier) aircraft such as the Airbus A380 and A340, Boeing 747-400 – aircraft making up a relatively large proportion of the aircraft currently operating at Heathrow – will in some cases have trouble complying with the climb gradient under certain environmental conditions (temperature, ambient pressure).

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<sup>4</sup> PEIR Volume 1, Chapter 17, 17.112

<sup>5</sup> <https://www.aerosociety.com/assets/docs/events/723/darren%20rhodes.pdf>

<sup>6</sup> [https://www.heathrow.com/file\\_source/HeathrowNoise/Static/Heathrow\\_Slightly\\_Steeper\\_Approach\\_Trial\\_Report.pdf](https://www.heathrow.com/file_source/HeathrowNoise/Static/Heathrow_Slightly_Steeper_Approach_Trial_Report.pdf)

<sup>7</sup> PEIR Volume 1, Chapter 17, 17.113

7.5 Without providing information on how such measures would be secured in the DCO itself, it is not clear how HAL claims these measures would be effective mitigation. In this context, the reliance on noise envelopes is wholly unacceptable for the reasons set out in the Mayor’s response to the Environmentally Managed Growth approach.

## **8. Aircraft development and fleet renewal**

8.1 The likely noise impacts in any given year are dependent on the noise profile of the aircraft operating. As such, the forecast impacts are sensitive to the assumptions around new aircraft technology and their rate of introduction as airlines renew their aircraft fleet – i.e. the cumulative annualized noise reduction.

8.2 HAL has set out three scenarios for aircraft noise performance, which it describes as likely, best and worst case scenarios. The likely scenario consists of a cumulative annualized noise reduction of 0.4 dB and is the only scenario tested. Crucially, HAL does not test its worst case scenario and this is a serious omission.

8.3 Nor does HAL provide sources or detailed descriptions for how any of the scenario reductions have been determined.

8.4 It certainly cannot be automatically assumed that next generation aircraft are quieter than their predecessors. New widebody aircraft such as the Airbus A350 and Boeing 787 typically entail a noise reduction compared to the aircraft they replaces such as the Airbus A330 and Boeing 767. But new narrowbody aircraft such as the Boeing 737MAX and the Airbus A320neo, can even have a greater noise impact than classic Airbus A320 and the Boeing 737 aircraft they replace due to the increased weight of the new aircraft.

8.5 It cannot be stressed enough that the suggested cumulative annualized noise reduction at Heathrow needs to be substantiated by detailed analysis of the forecast traffic – in terms of aircraft types and fleet mix. Without this detailed analysis, there can be no confidence that the true noise impact has been properly calculated and adequate mitigation proposed.

8.6 With regard to these forecasts, HAL states that:

*“The ATM forecast schedules have been produced by Heathrow and specify the number, type and destinations of aircraft that are forecast to operate from Heathrow. ATM forecast schedules have been produced for the Future Baseline scenario for the years of 2022, 2024, 2025, 2027, 2030, 2035, 2040 and 2050, and for the DCO Project scenario for the years of 2022 to 2027, 2030, 2035, 2040, 2045 and 2050.”<sup>8</sup>*

8.7 However, the breakdown of aircraft in 2027, 2030 and 2035 provided, using the QC system, does not provide sufficient detail to be able to substantiate the suggested cumulative annualized noise reduction. HAL states that forecasts have been made but not published for consultation. It should be stressed that even a slight change in the

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<sup>8</sup> PEIR Volume 3, Chapter 9, 3.1.4

cumulative annualized noise reduction can have the effect of including or excluding thousands of people from the noise contours.

- 8.8 HAL should provide detailed information about what it has assumed as to the number, type and destinations of aircraft that are forecast to operate from Heathrow in the period if its assumptions about cumulative annualized noise reduction are to have any credibility.

## **9. Respite**

- 9.1 Heathrow has operated a runway alternation scheme during westerly operations since 1972 this has allowed the airport to implement respite from aircraft noise as part of its noise management strategy for those residents nearest the airport. Its proposals for expansion will effectively offer half the level of respite to the majority of those in the vicinity of the runways and this remains a great concern.
- 9.2 Instead HAL seeks to focus attention on the use of PBN to implement a wider form of respite for areas beyond the airport vicinity, but this raises questions about what HAL actually intends to implement and whether the noise metrics applied are effectively capturing those impacts.
- 9.3 HAL places considerable weight on respite to deliver noise mitigation. Yet it is clear from two produced two research reports<sup>9,10</sup> undertaken by Anderson Acoustics for HAL that the benefits or otherwise of respite are still not fully understood. As such it is questionable the extent to which it can and should be relied upon as mitigation for the significant increase in ATMs proposed.
- 9.4 Moreover, it should be understood that respite or relief does not equate to no aircraft noise but just a discernible or noticeable reduction in noise. This point is not recognised in the PEIR and the reductions in noise will range between none and a discernible amount. However, this amount is not in any way quantified. The full effects of respite need to be more transparently explained and a number of test receptors should be used to demonstrate the effects in terms of the average and maximum reductions likely.
- 9.5 The extent to which alternate use of flightpaths combinations will create “relief” from aircraft noise for receptors is also still to be tested. It is incumbent on HAL to demonstrate this. This should not detract from the significant loss of respite for those living close to the airport, most of whom will see respite halved compared to what is offered to local residents today.

## **10. Baseline**

- 10.1 The 2013 NPS baseline should not be used as the sole basis for assessments. HAL should also be collecting data and using a more up to date baseline to assess the potential noise impacts against, even if this is done as a test of sensitivities. This is to

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<sup>9</sup> [https://hacan.org.uk/wp-content/uploads/2013/06/2694\\_FinalReport\\_2-0\\_June-2016.pdf](https://hacan.org.uk/wp-content/uploads/2013/06/2694_FinalReport_2-0_June-2016.pdf)

<sup>10</sup> [https://www.heathrow.com/file\\_source/HeathrowNoise/Static/Respite\\_research\\_overview\\_and\\_technical\\_report.pdf](https://www.heathrow.com/file_source/HeathrowNoise/Static/Respite_research_overview_and_technical_report.pdf)



ensure that the mitigation proposed by HAL is comprehensive, effective and efficient.

- 10.2 HAL should assess noise impacts against a future non-expansion baseline. This should include the same new flightpath technology that HAL has assumed in the “Do Something” scenario. Notably, the implementation of PBN will occur with or without expansion, in line with the London Airspace Management Programme (LAMP).
- 10.3 The result of using the 2013 baseline is to net the increase in noise relating to additional aircraft movements against the noise reductions as a result of new technology – effectively denying local communities the benefits of those technologies. This is fundamentally unjust as well as contrary to the stipulations of the NPS and the draft London Plan.
- 10.4 The PEIR itself acknowledges that the size, extent and shape of the LOAEL contours may change between the PEIR, DCO and ACP. However, this has a critical bearing on any mitigation to be proposed as part of the DCO process, for impacts determined as part of the ACP. Any mitigation proposed and accepted at DCO stage must still be effective for the ACP.

## **11. Scale of impact**

- 11.1 Notwithstanding the concerns that have been raised, the analysis undertaken by HAL indicates over a million people expose to adverse noise impacts, around half a million of whom will be exposed for the first time.
- 11.2 Analysis previously undertaken for Government indicated that over two million people could be exposed to a significant increase in aircraft noise as a result of Heathrow expansion.
- 11.3 There can be little doubt as to the sheer scale of the aircraft noise impacts associated with Heathrow expansion. It is essential that the wide range of issues raised above are addressed so that a more comprehensive and realistic understanding of the likely noise impacts can be reached.

## **12. Other operational noise sources**

- 12.1 It is vital that HAL considers the likely noise impacts from non-aircraft sources such as road and rail, ground born noise sources and vibration. The assessment undertaken by HAL for other operational noise sources appears extremely high level. This is a requirement of both the EIA Regulations, the Airports NPS and the National Networks NPS. Far more detail is required to understand the likely significant effects and develop appropriate mitigation measures and the Mayor would expect that he and other consultees are provided an opportunity to comment on this aspect.
- 12.2 Notwithstanding the above, HAL documents other important and relevant matters to noise and vibration and their relevance to the assessment<sup>11</sup>. It states that BS 4142:2014

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<sup>11</sup> PEIR Volume 1 Chapter 17, Table 17.4

“Methods for rating and assessing industrial and commercial sound” has been used to assess the noise impact from static sources. This does not accord with the full scope of BS 4142:2014 (although the pre-2014 version did only address static or fixed sources as they were referred to at the time). The current version states:

*“This British Standard describes methods for rating and assessing sound of an industrial and/or commercial nature, which includes:*

*a) sound from industrial and manufacturing processes;*

*b) sound from fixed installations which comprise mechanical and electrical plant and equipment;*

*c) sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and*

*d) sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site”.*

12.3 Based upon the above scope of the Standard, the assessment methodology should be adopted for all fixed and mobile plant and vehicles associated with the airport expansion and for cumulative effects with existing plant and activities occurring with the current two runway LHR. A screening exercise would need to be undertaken to determine where these cumulative effects may occur, and these should be assessed accordingly. Mitigation should then be proposed on this basis.

12.4 It also states that operational noise sources are considered<sup>12</sup>. With regard to rail noise, only rail freight movements are identified. This implies that no other intensification of rail services is going to occur, so no assessment is necessary. This does not appear to be a justifiable position, particularly given the reliance on public transport, particularly rail, to limit growth in highway traffic for an expanded Heathrow.

### **13. Construction**

13.1 As construction is proposed to take place around the clock, there is significant scope for disruption to local communities. Evidence suggests that even contemporary projects grossly underestimate plant requirements and other operational assumptions, thereby underestimating impact and significance of effects. 2017 Regulations focus on accountability and testing noise emissions through monitoring. The input assumptions will be crucial.

13.2 The spatial extent for construction noise is given as up to 300m from any activity and where the LOAEL may be exceeded<sup>13</sup>. Given the very significant amount of construction activity required and given that this will be 24/7 for a significant time, it is suggested

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<sup>12</sup> PEIR Volume 1 Chapter 17, 17.4.5

<sup>13</sup> PEIR Volume 1 Chapter 17, 17.4.11

that the spatial scope should be extended to more accurately capture sensitive receptors.

- 13.3 Also provided are the levels at which the LOAELs to UAELs will occur for the range of sources considered<sup>14</sup>. For construction noise, Example Method 1 from Annex E of BS 5228-1:2009+A1:2014 is adopted. However, the construction works are long term and involve significant earth moving. This method is not applicable where major works will exceed 6 months. Instead, the following approach from the Standard should form the adopted methodology and criteria:

*“E.5 Construction works involving long-term substantial earth moving; Where construction activities involve large scale and long term earth moving activities, then this is more akin to surface mineral extraction than to conventional construction activity. In this situation, the guidance contained within the Technical Guidance to the National Planning Policy Framework [15] needs to be taken into account when setting criteria for acceptability”.*

- 13.4 The Technical Guidance states:

*“Subject to a maximum of 55 dB(A) LAeq, 1h (free field), mineral planning authorities should aim to establish a noise limit at the noise-sensitive property that does not exceed the background level by more than 10 dB(A). It is recognised, however, that in many circumstances it will be difficult to not exceed the background level by more than 10 dB(A) without imposing unreasonable burdens on the mineral operator. In such cases, the limit set should be as near to that level as practicable during normal working hours (0700–1900) and should not exceed 55 dB(A) LAeq, 1h (free field). Evening (1900–2200) limits should not exceed background level by more than 10 dB(A) and night limits should not exceed 42 dB(A), LAeq, 1h (free field) at noise sensitive dwellings.”* - *time*

- 13.5 Based upon the above, it is suggested that the limit of 55 dB LAeq, 1 h is adopted for daytime construction noise for these types of activities but only where the works are likely to occur for a period in excess of six months. Precedent for this type of approach has been set within a number of landmark appeal decisions associated with the construction of ports.
- 13.6 It is accepted that noise levels in the Project area may already be in excess of the 55 dB(A) daytime limit described above and hence areas where this limit should apply would need to be identified. Where levels are already in excess of this limit, an increase of up to 3 dB to the daytime ambient level would be acceptable. It should be noted that the 55 dB(A) is a free-field level whereas construction noise is generally reported as a façade level. A free-field level of 55 dB(A) is equivalent to a façade noise level of 58 dB(A). Obviously, where long term noise-generating 24-hour activities would potentially occur, lower thresholds for evening and night-time should be adopted.
- 13.7 The draft code of construction practice is also high level at this stage. While the document sets out the overall framework approach and some trigger levels, considering

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<sup>14</sup> PEIR Volume 1 Chapter 17, Table 17.14

the concerns with the assessment, this document will need to be reviewed to make sure that the proposals will be effective.

## **14. Vibration**

- 14.1 The information presented in the PEIR is extremely lacking on potential impacts and effects from vibration on both residential and non-residential receptors. In most cases where vibration is referenced it is in parenthesis and the text states;

*“Between the PEIR and ES, Heathrow will identify whether a significant adverse effect due to noise (including vibration) would occur at each receptor and if so, Heathrow will engage with the owners and users of these receptors to identify what further control measures are sustainable to avoid or reduce the significant adverse effect.”*

It is concerning that there appears to have been little assessment done on vibration given the scale and timeframe of the project. It would appear that HAL is “deferring” the assessment to the later EIA stage. We would expect to see that full consideration of the impacts of vibration from both construction and operational sources including construction activities such as piling and earthworks, ground borne noise, aircraft, road and rail. Without further detail in the PEIR, it is incredibly difficult to ascertain whether HAL is taking and will take appropriate measures to mitigate such significant effects as they arise.

## **15. Noise insulation**

- 15.1 Given the concerns about the assessment, it is not possible to ascertain the extent to which noise insulation indicated would actually be capable of mitigating the impacts.
- 15.2 Nor is it clear that HAL’s proposed noise insulation policy acknowledges or has sought to address the flaws of previous HAL schemes. In particular, for many affected residents, only a contribution will be provided, requiring the owner of the property to fund the remainder. Affordability is then further undermined by a lack of competition, given HAL’s insistence that the works be undertaken by an approved supplier<sup>15</sup>. This has undermined take-up of previous schemes.
- 15.3 HAL’s proposal to seek compulsory rights to impose changes to a property in certain circumstances, potentially including forced temporary rehousing,<sup>16</sup> could prove counterproductive. HAL needs to set out what it envisages in practice and exactly what powers it is seeking.
- 15.4 It is also worth noting that this type of noise mitigation cannot mitigate against increased noise exposure in the outdoor environment, for example school playgrounds or public realm around people’s homes. This also needs to be addressed.

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<sup>15</sup> Noise Insulation Policy, 5.3.12

<sup>16</sup> Noise Insulation Policy, 5.4.6