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Your Ref: 18/P/5118/OUT  
Our Ref : 46182

1<sup>st</sup> February 2019

Dear Mr Underhay,

**Re: Bristol Airport – Planning application for a proposed development to accommodate 12 million passengers per annum**

Thank you for consulting Public Health England (PHE) on the above planning application. The proposed development will seek to increase the existing passenger cap to 12 million passengers per year. This follows planning permission, granted in 2011, to increase the capacity from 8.2 to 10 million passengers per annum.

Advice offered by PHE is impartial and independent. Our comments are based on information provided within the Environmental Statement (ES).

**1. General approach to the Environmental Impact Assessment (EIA)**

The submitted ES appears to use national and industry good practice. We note that in cases where there is no specific guidance, such as the assessment of air quality impacts from airports, a reasonable approach has been taken.

We note the omission of a Decommissioning Environmental Management Plan (DEMP) from the submission and understand the rationale. We note however that a DEMP can also feed into the planning and design process, ensuring that a site is constructed and managed so as to expedite decommissioning when the time comes. We would recommend that decommissioning, demolition and contamination issues are fully considered in the design and construction stages of the project to minimise future risks to the environment and public health at such time as the site ceases to operate or faces further major development.

We have reviewed the Construction Environmental Management Plan (CEMP) submitted with the application and can confirm that we are satisfied with both the scope of the document and approach taken.

We expect the applicant to propose a suitable strategy to ensure the dissemination of the findings of the health assessment to relevant stakeholders, including the noise sensitive receptors impacted by the scheme.

## **2. Emissions to atmosphere**

We welcome the inclusion of an assessment of the impacts on air quality from dust produced during construction and the cumulative effects of road traffic, aircraft emissions and ground support equipment during the operation of the airport. It is noted that the current air quality around the airport is good and within legal limits.

We support the methodology used to assess the impact from dust during the construction phase and note that without mitigation measures there is a medium risk of dust soiling arising from the A38 construction activities. We recommend that the Local Authority ensure that the dust control measures employed are adequate to minimise the emissions of dust from the site.

During the operation of the airport, we agree that the major pollutants of concern are nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub>/PM<sub>2.5</sub>). We agree with the approach taken in the air quality assessment. We note that committed future developments in the vicinity of the airport have been reviewed to identify additional sources of emissions. We recommend that the Local Authority makes reference to this when considering any future residential developments in the area close to the application site.

The air quality assessment concludes that there are no receptors where the annual mean NO<sub>2</sub> concentration is predicted to exceed the annual mean Air Quality Assessment Level (AQAL) of 40 µg/m<sup>3</sup>. Defra guidance suggests that where the annual mean NO<sub>2</sub> concentration is below 60 µg/m<sup>3</sup> it is unlikely that there will be a breach of the one-hour AQAL. We are reassured that all modelled annual mean NO<sub>2</sub> concentrations are below this value and there is unlikely to be an exceedance of the one-hour mean NO<sub>2</sub> AQAL.

## **3. Chemical pollutants and land quality**

We are satisfied with the approach taken in the land quality assessment for determining the risks from historic land use.

We note that additional intrusive investigation will be undertaken as necessary based on site conditions once development commences. We recognise that, in order to finalise the contaminated land investigation and assessment, agreement will be needed with the Environment Agency, Water Company and Local Authority. We are satisfied that this approach should secure the protection of public health.

There is the potential for accidental release of fuel or other chemicals during the construction and operational phases of the site. We are satisfied that the CEMP, and other operational documents, should provide adequate protection of public health.

#### **4. Emissions to water**

The aquifer beneath the application site is sensitive to pollution. We note that an Environmental Response Plan (ERP) will be produced as part of the overarching CEMP to mitigate the effects of chemical spillages during the construction phase. We are reassured that existing operations incorporating best practice have led to no observable impact on the aquifer beneath the site. During operation, we would expect the Airport to comply with the conditions to control discharges to groundwater set out in an Environmental Permit.

#### **5. Noise**

##### **Health Outcomes**

We welcome the assessment of annoyance and sleep disturbance due to operational noise included in the Environmental Statement Chapter 7 Noise and Vibration (c.f. 7.10.10-7.10.13). It is suggested that, as well as the number of people affected, it may also be informative to express noise impacts in terms of DALYs and in monetary terms.<sup>1,2</sup>

We do not agree with the statements “This does not take account of any improved insulation for dwellings which have benefitted from the noise insulation grant scheme” (c.f. 7.10.10, 7.10.12). There is at present insufficient good quality evidence as to whether insulation schemes are effective at reducing annoyance and self-reported sleep disturbance<sup>3</sup>.

We recommend that additional health outcomes are also considered, including cognitive impairment in children in local schools, and cardiovascular disease.

We welcome the acknowledgement of the 2018 WHO Environment Noise Guidelines (ENG) (c.f. 7.9.13). We recognise that a significant proportion of the UK population are currently exposed to noise levels exceeding the WHO guideline recommendations, and aligning population exposure more closely to the guideline levels requires a long-term, ambitious strategy. Nevertheless, we would recommend the scheme promoter to outline in more detail how the proposed development aims to reduce the associated adverse effects of noise on health and quality of life in the long term. Furthermore it should be noted that the ENG include a revised, systematically-reviewed evidence-base that underpins the recommendations. We recommend that this updated evidence base is taken into consideration when quantifying the health effects of noise.

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<sup>1</sup> WHO Burden of Disease from Environmental Noise, 2012.

<sup>2</sup> Defra/Interdepartmental Group on Costs and Benefits Noise Subject Group, 2014.

<sup>3</sup> [Lex Brown and Van Kamp. WHO Environmental Noise Guidelines for the European Region: A Systematic Review of Transport Noise Interventions and Their Impacts on Health. \*Int. J. Environ. Res. Public Health\* 2017, 14\(8\), 873;](#)

## **Mitigation measures – in particular sound insulation**

We expect decisions about mitigation measures to be underpinned by good quality evidence, in particular whether mitigation measures are proven to reduce adverse impacts on health and quality of life. For interventions where evidence is weak or lacking, we expect a proposed strategy for monitoring and evaluating their effectiveness during construction and operation of the scheme.

With regards to the sound insulation of buildings, we welcome the applicant's proposal to enhance the existing noise insulation grant scheme for an appropriate period to encourage take-up and implementation of mitigation measures (c.f. 7.15.3), alongside a proactive advertising campaign in affected constituencies (c.f. 7.15.8).

We expect any proposed noise insulation schemes to take a holistic approach which achieves a healthy indoor environment, taking into consideration noise, ventilation, overheating risk, indoor air quality and need to open windows.

## **Green spaces and private amenity spaces**

We expect proposals to take into consideration the evidence which suggests that quiet areas can have both a direct beneficial health effect and can also help restore or compensate for the adverse health effects of noise in the residential environment<sup>4,5,6</sup>. Research from the Netherlands suggests that people living in noisy areas appear to have a greater need for areas offering quiet than people not exposed to noise at home<sup>4</sup>.

The proposed noise insulation scheme will not protect amenity spaces (such as private gardens) from increased noise exposure, and there may be opportunities to create new tranquil public spaces that are easily accessible to those communities exposed to increased noise from the scheme.

## **Construction noise**

We welcome the recommendations made in Chapter 7 relating to the Outline Construction Environmental Management Plan (c.f. 7.15.14) and encourage the adoption of these recommendations by the applicant.

We acknowledge there is a paucity of scientific evidence on the health effects attributable to construction noise for large infrastructure projects, where construction activities may take many years. We recommend that the applicant considers emerging evidence as it becomes available (e.g. HS2<sup>7</sup>) and regularly reviews its assessment of impacts.

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<sup>4</sup>Health Council of the Netherlands Publication no. 2006/12, 2006

<sup>5</sup> LIFE09 ENV/NL/000423, QSIDE - The positive effects of quiet façades and quiet urban areas on traffic noise annoyance and sleep disturbance

<sup>6</sup> COST TD0804, Soundscape of European Cities and Landscapes, 2013

<sup>7</sup>HS2 U&A ref 2109 in [HS2 Phase One register of undertakings and assurances](#)

## **Human Health assessment**

We welcome the use of local health indicators and priorities in Chapter 16 of the Environmental Statement, Human Health (c.f. 16.5.1), and note the finding that, “the greatest potential for population level changes to health, in terms of noise effects of sufficient extent and severity, relate to night-time air noise (exposure at or above the SOAEL for 100 more dwellings when comparing the 2026 ‘with development’ to the 2026 ‘without development’ scenarios)” (c.f. 16.11.18). It is very important that the expected benefits attributed to the enhanced noise insulation scheme are achieved in practice (see above), and monitoring/post evaluation of health outcomes may be necessary to verify this.

We note that Chapter 16 does not consider in detail potential interaction effects between the wider determinants of health (e.g. noise, air quality, community cohesion), which could lead to cumulative effects not captured in the assessment.

## **Finalisation of flight paths**

We acknowledge that for aviation noise, noise modelling is based on indicative, rather than finalised flightpaths. We expect the applicant to agree a strategy with relevant stakeholders to address this issue, and additional assessments may be necessary during the finalisation of flightpaths if consent is granted, to assess the full scale and distribution of localised impacts.

## **6. Electric and Magnetic Fields (EMF)**

The submitted proposal does not include a specific section assessing risks associated with EMF and there is no reference to EMF in the Scoping Report. There is a potential health impact associated with the electric and magnetic fields around substations, and power lines and cables. The applicant should confirm that an adequate assessment of the possible impacts of EMF has been undertaken. Our advice on the health effects of power frequency electric and magnetic fields is available in the following link:

<https://www.gov.uk/government/collections/electromagnetic-fields#low-frequency-electric-and-magnetic-fields>

We hope that our comments are useful but should you wish to discuss any issues raised in this letter or have any questions relating to our response please do not hesitate to contact us.

Yours sincerely

On behalf of Public Health England