

Gravesham Borough Council's Post hearing Written Submissions - Issue Specific Hearing on Draft Development Consent Order (DEADLINE 5 – 06/07/2018)

Draft Requirement 10

For deadline 3, the PoTLL submitted a second revision of the draft Development Consent Order (REP3-003).

Noise monitoring and mitigation

10.—(1) Prior to the commencement of first operational use of any of Work Nos. 1 to 8 the Company must carry out a re-assessment of the predicted noise impacts arising from the finalised detail design and operational procedures to be implemented for those works.

(2) Following the re-assessment carried out under sub-paragraph (1), if external noise is predicted to be above the Significant Observed Adverse Effect Level (SOAEL) at any receptor, the Company must offer that receptor a package of mitigation. The package must include at that receptor the installation of triple glazing, or such other form of noise insulation, the effect of which is an improvement in the overall noise insulation of the building by a margin calculated to be not less than the amount by which the external noise level is predicted to exceed SOAEL.

(3) No part of Work Nos. 1 to 8 can be brought into operational use until a written noise monitoring and mitigation scheme for the operation of those works based on the results of the re-assessment carried out under sub-paragraph (1) is agreed with the relevant planning authority and Gravesham Borough Council and is implemented in accordance with the terms of the agreed written scheme.

(4) A scheme under sub-paragraph (2) must include provision for the following matters—

- (a) the nature and temporal length of monitoring;
- (b) a trigger point at which the Company will be required to make an offer of mitigation to an affected receptor during such monitoring; and

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- (c) that any mitigation offered to an affected receptor must include the offer of the installation of noise insulation or triple glazing, or such other form of noise insulation, at that receptor.

In our response to the ExA's FWQ 2.16.3 , we made reference to condition 9 for the planning permission for the proposed importation of inert waste materials to restore Woodeaton Quarry in Woodeaton, Oxfordshire, which required the following:

Condition 9 No development shall commence until a detailed noise monitoring scheme has been submitted to the Waste Planning Authority and approved in writing. The scheme shall include details of noise monitoring locations, noise limits at those locations, the method and frequency of noise monitoring and provisions for keeping records of noise monitoring and supplying these to the Waste Planning Authority. Any scheme that is approved shall be implemented in full for the duration of the development. Noise levels shall not exceed those specified in the approved scheme. Reason: To ensure that the development does not cause a noise nuisance to residents of Woodeaton (OMWLP W7) https://consult.environment-agency.gov.uk/psc/ox3-9tj-mckenna-environmental-limited/supporting_documents/Operational%20management%20plan.pdf

GBC continues to maintain its view that noise limit levels should be set in requirement 10 of the DCO.

In our response to the ExA's FWQ 2.16.3, we highlighted that noise limit levels are routinely used for minerals applications, and these are normally varied depending on whether it is a work day, weekend and whether it is day, evening or night. We don't agree that they shouldn't be used for ports and would draw the ExA's attention to the 'Good Practice Guide on Port Area Noise Mapping and Management' which has been developed by the partners of the NoMEPorts (Noise Management in European Ports) Project – it is available via http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=NoMEports_GPG_PANMM1.pdf

The document provides guidance and examples of best practice on noise management in ports, but also for other industrial areas. It sets out six steps which take into consideration the geographical situation and future developments, inventory of noise sources, noise modelling, noise mapping and action planning and then, finally, ongoing noise management.

The document advises (with our emphasis in bold):

A good methodology in noise management is to translate the future port planning into a noise allocation map. In this map, a noise budget should be allocated to each plot of land according to the foreseen or actual use. **Noise levels calculated must be within legal limit values and/or any agreement with the local authorities. Levels that are too high indicate that the future port planning should be adjusted** or mitigation measures should be considered.

The noise allocation map should be the outcome of a process between all stakeholders, and adopted by the economic department of the port authorities and representatives of the local municipality. All stakeholders must agree on this map and the noise levels. The implications of the noise allocation map should be applied if the port planning is to be changed and the **noise levels**/contours calculated with the future acoustical model should be used for city planning purposes.

Section 1.7 of the document then considers noise management:

Noise pollution, the excessive or annoying degree of unwanted sound in a particular area has become an increasingly significant environmental issue for many port authorities.

Noise levels are measured in decibels (dB), based on a logarithmic scale correction for ear sensitivity at lower levels that is expressed by the A-weighting dB(A). Noise indicators are typically an average of volume and duration over a fixed period of time. Because noise level changes all the time, averaging is termed equivalent noise level (Leq). LAeq refers to the energy equivalent average sound pressure level measured using the A-weighting which is most sensitive to speech intelligibility frequencies of the human ear. As the same noise is judged differently between day time and night time, the EU proposed time periods for calculations are:

- *Lday is the A-weighted long-term average sound level 07:00-19:00 (12 hours)*

- *Levening is the A-weighted long-term average sound level 19:00-23:00 (4 hours)*
- *Lnight is the A-weighted long-term average sound level 23:00-07:00 (8 hours)*

The overall day-evening-night noise level is expressed by the Lden indicator.

Lden is a descriptor of noise level based on energy equivalent noise level (Leq) over a whole 24 hour day with a penalty of 10 dB(A) for night time noise (23.00-7.00) and an additional penalty of 5 dB(A) for evening noise (19.00-23.00).

According to the World Health Organization the following noise levels have to be taken into account (Guidelines for Community Noise, edited by Birgitta Berglund, Thomas Lindvall, Dietrich H. Schwela, World Health Organization 1999). They state that at night, sound pressure levels at the outside façades of living spaces should not exceed 45 dB Lnight and 60 dB LAm_{ax}, so that people may sleep with bedroom windows open. These values have been obtained by assuming that the noise reduction from outside to inside with the window partly open is 15 dB.

The document then looks at 2 case studies which includes Livorno Port in Italy. The figures present the LDEN (left figure) and LNight (right figure) noise maps of the Livorno port area highlighting the identified priority areas. It explains that “Spot 4 is particularly interesting because of the presence of port activities near to the city. The noise impact is mainly due to them berthed ships and road traffic. The spot is also of interest because of its LNight observed values (50-55 dB(A) that reach the noise limit of 55 dB(A) which is imposed by the present Italian legislation”.

It should be noted that this isn't just the case for European ports – Port Napier, in New Zealand, operates continuously, 24 hours per day. Its published Port Noise Management Plan http://www.napierport.co.nz/media/10952/port_noise_management_plan.pdf includes

3.4 Monitoring and Reporting Port Napier will:

- Maintain and operate a permanent noise monitoring station at the location on the map in Section 7. The Port may vary the location of the monitor station due to operational requirements. Where this occurs, the Port will liaise with the Council and inform the Committee accordingly.
- Carry out monitoring to calibrate and ensure that the Port Noise Contour Map provides an accurate representation of Port Noise during a busy five-day operating period.
- Provide the latest results of the monitoring to each meeting of the Port Noise Liaison Committee. The copy of the Port Noise Contour Map in Section 7 will be replaced annually.
- Report results in accordance with the noise limits in Appendix 33A (2) and Rule 28.15(a-d) of the Environment Court Consent Order (*Please note - Appendix 33A is an appendix of the City of Napier District Plan*).

Before we consider defining noise limits, we want to reiterate that the human ear's response to sound level is roughly logarithmic (based on powers of 10), and the dB scale reflects that

fact. Therefore, a small increase in decibels represents a large increase in intensity. For example - 10dB is 10 times more intense than 1dB, while 20dB is 100 times more intense than 1dB. The sound intensity multiplies by 10 with every 10dB increase. A change of 3dB is often regarded as a 'just noticeable' difference.

GBC recognises that, if the ExA is minded to agree that noise limit levels should be set in the DCO, it has 2 options (we are going to focus on night as that is our key concern but it is applicable for other times too as highlighted above):

- **Using national / international standards** - In relation to maximum noise levels at night the executive summary of the WHO Night Noise Guidelines for Europe 2009 guidance states;

For the primary prevention of subclinical adverse health effects related to night noise in the population, it is recommended that the population should not be exposed to night noise levels greater than 40 dB of L_{night} , outside during the part of the night when most people are in bed. The LOAEL of night noise, **40 dB L_{night}** , outside, can be considered a health-based limit value of the night noise guidelines (NNG) necessary to protect the public, including most of the vulnerable groups such as children, the chronically ill and the elderly, from the adverse health effects of night noise.

We recognise that the guidance does suggest an interim target (IT) of 55 dB L_{night} but it then is clear that IT should be considered only as a feasibility-based intermediate target which can be temporarily considered by policy-makers for exceptional local situations as the interim target is not a health-based limit value by itself and vulnerable groups cannot be protected at this level. WE didn't think exceptional local circumstances exist.

Therefore, if the ExA could consider setting a night noise level for sensitive receptors at:

- LOAEL of night noise, 40 dB
- Considering the existing noise levels, the ExA could consider that this LOAEL of night noise is not suitable as stated and it could have an uplift of +3dB which could be "just noticeable" at 43dB or +5dB (45dB)
- **Set noise limits once further modelling has been undertaken** – GBC considers that BS4142 and LMAXs could come in and this would lend weight to adopting an ongoing noise management plan. The requirement could then be explicit as part of the agreement to undertake more monitoring that:
 - No development shall commence until a detailed noise monitoring scheme has been agreed with the relevant planning Authority and Gravesham Borough Council.
 - The scheme shall include details of noise monitoring locations, **noise limits at those locations**, the method and frequency of noise monitoring and provisions for keeping records of noise monitoring and supplying these to the relevant planning Authority and Gravesham Borough Council.
 - Any scheme that is approved shall be implemented in full for the duration of the development.
 - Noise levels shall not exceed those specified in the approved scheme.

This second option of defining limits as part of the additional monitoring to take place once the cMAT operator and all their equipment specification and operational procedures are known, would also be compatible with other areas where further technical work is anticipated. At the hearing sessions, the “Marine Archaeological Written Scheme of Investigation (WSI)” was discussed. Simply it was agreed that the WSI currently has gaps and the PoTLL will come back to key stakeholders to address these issues as information becomes available – so the current WSI could be considered to be an outline which will be refined once detailed parameters are known.

Before the hearing sessions, the PoTLL shared a revised version of requirement 10:

Noise monitoring and mitigation

10.—(1) Prior to the commencement of first operational use of any of Work Nos. 1 to 8 inclusive the Company must carry out a re-assessment of the predicted noise impacts arising from the finalised detail design of those works and the operational procedures to be implemented for those works/ them.

Initial noise insulation

(2) Following the re-assessment carried out under sub-paragraph (1), if external noise is predicted to be above the Significant Observed Adverse Effect Level (SOAEL) at any receptor, the Company must offer that receptor a package of mitigation. The package must include at that receptor the installation of triple glazing, or such other form of noise insulation, the effect of which is an improvement in the overall noise insulation of the building by a margin calculated to be not less than the amount by which the external noise level is predicted to exceed SOAEL.

(3) The package of mitigation to be offered in accordance with sub-paragraph (2) must include at that receptor the installation of triple glazing, or such other form of noise insulation, the effect of which is predicted to be an improvement in the overall noise insulation of the building by a margin that is not less than the amount by which the external noise level is predicted to exceed SOAEL.

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(4) If the package of mitigation offered in accordance with sub-paragraph (2) is agreed by the owner and occupier of the receptor, then it must be implemented at the cost of the Company prior to the commencement of first operational use of any of Work Nos. 1 to 8 inclusive.

Ongoing noise monitoring and mitigation scheme

(5) ~~(2)~~ No part of Work Nos. 1 to 8 ~~can~~ inclusive must be brought into operational use until a written noise monitoring and mitigation scheme for the operation of those works based on the results of the re-assessment carried out under sub-paragraph (1) or final detailed design of those works and the operational procedures to be implemented for them has been agreed with the relevant planning authority and Gravesham Borough Council and is implemented in accordance with the terms of the agreed written scheme.

(6) ~~(3)~~ A scheme agreed under sub-paragraph (5) must as a minimum include provision for the following matters—

- (a) the nature and temporal length of monitoring;
- (b) provision for variation of the scheme if the design or operational procedures for Works 1 to 8 change from the date of the agreement of those works;
- (c) ~~the~~ a trigger point at which the Company will be required to make an offer of mitigation to an affected receptor during ~~each~~ the period of the monitoring; and
- (d) ~~that~~ any mitigation offered to an affected receptor must include the offer of the installation of ~~noise insulation or~~ triple glazing, or such other form of noise insulation, at that receptor.

Requirement 13 of The River Humber Gas Pipeline Replacement Order 2016

<https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/EN060004/EN060004-001298-Development%20Consent%20Order%20as%20made%20by%20the%20Secretary%20of%20State.pdf>, albeit focused on the construction phase, is clear that the written scheme for noise management could include noise limits.

Noise

13.—(1) No stage of the authorised project may commence until a written scheme for noise management during construction and maintenance of that stage has been submitted to and approved, in writing, by the relevant planning authority.

(2) The scheme must set out the particulars of—

- (a) the works, and the method by which they are to be carried out;
- (b) the noise attenuation measures to be taken to minimise noise resulting from the works, including any noise limits; and
- (c) monitoring to be undertaken at identified sensitive receptors pre- and during construction.

(3) The approved noise management scheme must be implemented before and maintained during construction and maintenance of the relevant stage of the authorised project.

(4) The authorised project must be undertaken in accordance with the approved noise management scheme.