

CHAPTER 12

NOISE

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12.0 CHAPTER 12 NOISE

An Addendum Noise Assessment is presented within Appendix 12A. The assessment has been prepared by Acoustical Control Consultants (Belair Research Limited) and considers the proposed noise impacts associated with the proposed waste recovery, recycling and treatment operations within the IWMF with a stack at a revised maximum height of 58 m above surrounding ground level (108 mAOD).

The following conclusions have been drawn from the Addendum Noise Assessment is presented within Appendix 12A, which also forms part of the final Draft Environmental Permit No EPR/FP3335YU package issued by the Environment Agency on 20 June 2017 (i.e. its results and conclusions have been effectively reviewed and validated).

The assessment confirms that the IWMF will meet the requirements of Conditions 38, 39, 40 and 42, and that noise monitoring will be carried out on a quarterly basis (every three months) following the commencement of IWMF operations in accordance with Condition 41.

12.1 Updated Noise Baseline 2017

Baseline surveys were originally undertaken in October 2005 and are routinely reviewed for the adjacent quarrying operations; with the most recent targeted baseline monitoring being completed in November 2016; this has confirmed that the acoustic environment has remained consistent.

12.2 Updated Noise Assessment 2017

The original Noise Assessment noted that BS4142:1997 may not be the most appropriate assessment methodology and that other guidance for example from the World Health Organisation (WHO) and BS8233:1999 Sound Insulation and Noise Reduction for Buildings offered more appropriate means of assessing internal sound levels as a result of external sound at night. The majority of the updates are associated with noise incidence during the night.

Both BS4142:1997 and BS8233:1999 were revised in 2014. One of the significant differences between BS4142:2014 and previous editions of the Standard is the explicit requirement to consider context as part of the assessment. It is no longer adequate to simply compare the Rating Level and the Background Sound Level without due regard to the context of the acoustic environment and the sound source. This is consistent with the original assessment's approach to also consider other more appropriate guidance. BS8233:2014 offers updated guidance on suitable indoor sound levels as a result of external noise. For dwellings the main considerations are to protect sleep in bedrooms and to protect resting, listening and communicating in other rooms. For noise without a specific character it is desirable that the overall average levels during the 8 hour night or 16 hour day time periods do not exceed 30 dBA or 35 dBA respectively.

For amenity space, such as gardens and patios, it is desirable that the average level does not exceed 50dBA, with an upper guideline value of 55dBA which would be acceptable in noisier environments. For dwellings with conventional windows, an internal target of 35dBA during the day equates to around 50dBA (possibly slightly lower) outside noise sensitive rooms with openable windows.

The National Planning Policy Framework (NPPF), Noise Policy Statement for England (NPSE) and National Planning Practice Guidance (NPPG) were issued in 2012, 2010 and 2012 respectively.

These documents note that there is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking. Assessments should be proportionate to the proposed development. Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations.

Below the No Observed Effect Level (NOEL) sound is unnoticeable and of no significance. Below the Lowest Observed Adverse Effect Level (LOAEL) sound can be heard but does not cause any changes in behaviour or attitude, although the acoustic character of the area may be slightly changed. Below the Significant Observed Adverse Effect Level (SOAEL) sound may cause slight changes in behaviour or attitude e.g. turning up volume of a television or closing windows. There is potential for some sleep disturbance and a perceived change in the acoustic character of the area and quality of life.

Areas of Tranquillity should be protected, but in general cases it may be inappropriate to achieve a level below the LOAEL as this provides no benefit but may require additional resources such as energy, materials, space, time and money, adversely affecting the sustainability of doing so. Noise above the LOAEL should be mitigated and reduced to a minimum, although it may be appropriate to exceed the LOAEL and create an adverse acoustic impact, if this provides other sustainability benefits that are of greater significance. Noise above the SOAEL should be avoided.

The World Health Organisation: Night Noise Guidelines for Europe provides an update to the WHO - Guidelines for Community Noise document. These documents note that a steady level of 30dBA within bedrooms is suitable to protect vulnerable people from sleep disturbance and that occasional maximum levels of up to around 42dBA to 45dBA are also consistent with this. The difference between a sound level outdoors and the resultant level indoors with open windows varies through Europe due to differing building characteristics and particularly window type. An average difference of around 15dBA is often used, although this is also dependent upon other factors such as the frequency spectrum of the incident sound.

Based on the above, it is clear that the 2008 approach to the noise assessment for the IWMF (approved under the implemented planning permission ESS/34/15/BTE) was wholly consistent with the revised/updated informative guidance.

Planning conditions were set based on the report recommendations for operations being undertaken during the night. During the day the existing Bradwell Quarry noise conditions were adopted for the IWMF and an intermediate limit was applied during the evening.

Noise conditions have been set around the site to control the noise levels from site operations at the most sensitive residential properties. These conditions limit noise levels resulting from all operations associated with the site, i.e. coincidental IWMF and quarrying operations. The noise levels that are conditioned under the existing IWMF planning permission are consistent with those that apply to the adjacent quarrying operations.

By increasing the height of the stack the emission point (i.e. the top of the stack) will become further away from the receptors and so the contribution to overall sound levels will be very slightly lower. The total sound energy radiated by the shell of the stack will remain the same so the contribution from this element will remain approximately the same; however, by increasing the length of the stack the sources are slightly higher (elevation) and so factors such as ground absorption, screening by the building and terrain are slightly less which results in slight increases in sound level at nearby residential properties. These increases are of the order 1dB to 2dB which are acoustically insignificant. Noise levels resulting from the

operation of the IWMF still comply and satisfy the existing planning condition(s) relating to noise limits.

Compared with the existing and implemented planning permission, there will be no overall change in the noise environment in and around the Site resulting from the proposed increase in the height of the IWMF stack. The requirements of Planning Conditions 38, 39, 40 and 42 will continue to apply.

12.3 Draft Environmental Permit EPR/FP3335YU/A001

On the 3 March 2017 a second (revised) Environmental Permit application was submitted to the Environment Agency on GFC's behalf by Fichtner Consulting Engineers Limited for the Rivenhall Integrated Waste Management Facility. This second (revised) Environmental Permit application addressed the original consultation responses raised by local Councillors and members of the public who had expressed concern about the height of the stack.

On the 20 June 2017, the Environment Agency confirmed that it was "minded to" permit the application and issued for public consultation a single Draft Environmental Permit combining all waste management operations within the IWMF reference (Draft Environmental Permit Number is EPR/FP3335YU/A001).

The final approved details of the Environmental Permit submissions demonstrate that the IWMF embodies Best Available Techniques (BAT) to prevent, and where this is not practicable, to reduce emissions and the impact on the environment as a whole to acceptable standards. The submitted design and the air quality impact modelling and other associated assessments all relate to a revised stack height of 58 metres above surrounding ground level (108mAOD).

Stakeholder engagement events for the Environmental Permit Application were held by the Environment Agency on the 20 and 31 March 2017 at Silver End and Coggeshall; and, a further stakeholder event is planned for the 30 June 2017 at Coggeshall, following the Environment Agency's "minded to" permit decision. The public consultation on the Draft Environmental Permit will run from 20 June to 18 July 2017 after which the Environment Agency will issue its final decision and, if appropriate, the approved Environmental Permit.

Noise modelling was completed to support the Environmental Permit Application which confirms that the IWMF will meet the requirements of Conditions 38, 39, 40 and 42. [Refer to Appendix 12A]

The baseline environment used within the model accounts for the existing quarrying operations within other areas of Bradwell Quarry [namely, the ongoing quarrying operations], as such the model confirms the cumulative impact of parallel daytime operations in and around the site.

12.4 Cumulative Noise Assessment

There will be no overall change in the noise impacts arising from the development of the IWMF site. Cumulative impacts associated with the development of the IWMF alongside the former Site A2 and existing Site A3 and A4 quarrying operations were considered by the 'Site Specific Issues to be Addressed' set out within Essex County Council's emerging Replacement Minerals Local Plan and adopted 2014 Minerals Local Plan, namely:

'Careful consideration must be given to the final low-level restoration contours to ensure the final landform blends with the surrounding topography and could blend

with the levels and planting of the strategic waste management development (Ref ESS/37/08/BTE) if implemented.'

Similarly the future extension of quarrying operations across Bradwell Quarry into Site A5 (as a 'preferred' site) and Site's A6 and A7 (as 'reserve' sites) will be designed to limit impacts associated with their development on the local noise climate.

On the 7 October 2016, Blackwater Aggregates received planning permission (ESS/07/16/BTE) for a variation of conditions to modify the restoration scheme for Bradwell Quarry under planning which permits the integrated use of materials excavated from the footprint of the IWMF site within the overall restoration of the adjacent quarry.

The materials excavated from the IWMF site, can be relocated and stockpiled across New Field in a planned and systematic manner over a 6 to 8 month period. As the stockpile is created, to maintain continuity of the existing quarrying operations, particularly the provision of a sustainable water supply to the screening and washing plant, a temporary lagoon will be created known as 'Sheepcotes Lagoon'. The subsequent excavation of the stockpile and use of the materials within the overall restoration scheme will be integrated into the final site restoration scheme over a period of 3 to 5 years.

The stockpiling of overburden materials from within the footprint of the IWMF across New Field was assessed and demonstrates that the operations will comply with the existing site noise limits.

On the 23 December 2016, Gent Fairhead & Co Limited received planning permission ESS/44/16/BTE for the Installation of an abstraction point, pumping equipment and water main from the River Blackwater to the IWMF site (ESS/34/15/BTE) using an existing abstraction licence (Environment Agency ref AN/037/0031/001/R01) at land between River Blackwater and IWMF site. The noise assessment prepared in support of the application demonstrated that standard methods of working will be applied to the works to manage, control to mitigate noise impacts.

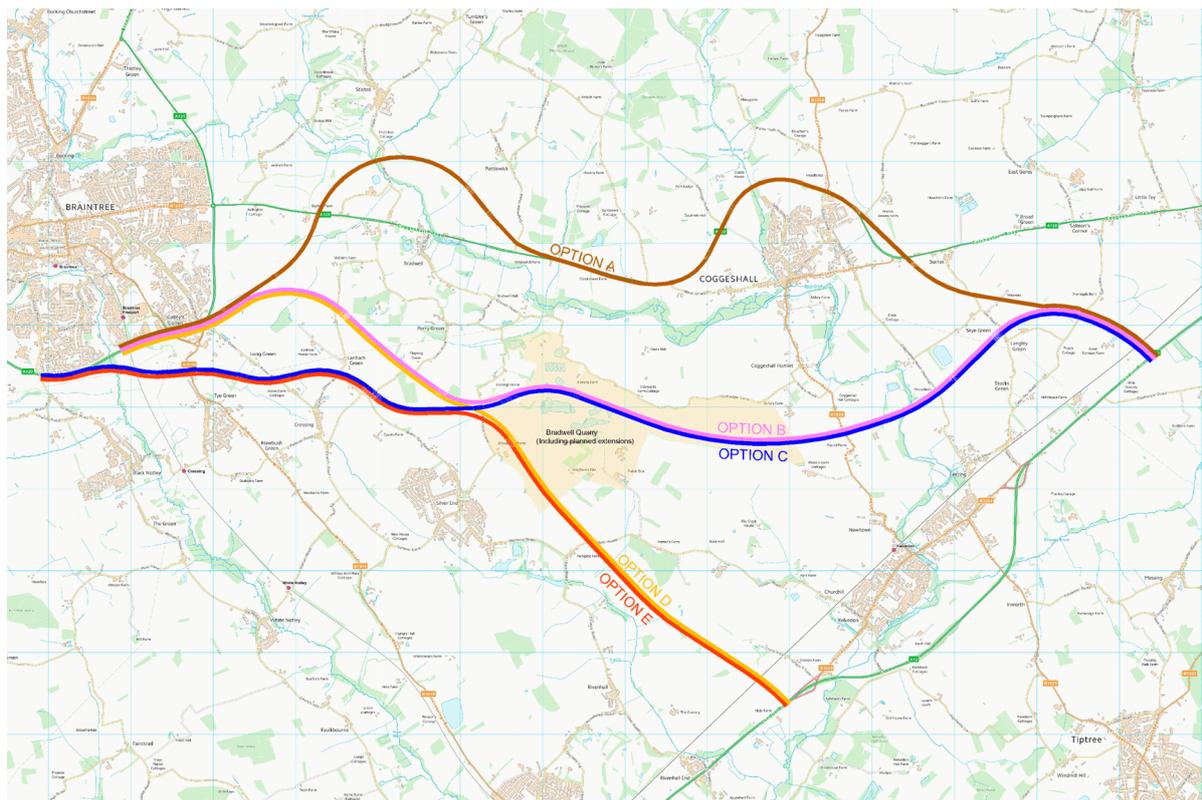
Furthermore, the cumulative impact associated with the installation of the proposed electricity cable and water abstraction (and potential discharge) pipelines (prepared in support of the Addendum Environmental Statement 2015 and presented as Appendix 12B), demonstrate that standard methods of working will manage, control to mitigate noise impacts adjacent to residential properties or members of the public. Therefore, the noise impact associated with these works will be low, only apply during normal working hours and will be transient and short term in nature.

The proposed Gladman Development project for 350 houses on land east of Silver End, was considered at a Public Inquiry on 31 January 2017. Subsequently, on 21 March 2017, the Secretary of State decided to grant outline planning permission for this development "*with all matters reserved for subsequent approval*". The Inspector's Report states that the Gladman Development application, "*considers the impact of Bradwell Quarry and a proposed waste facility on the proposed houses, concluding that there would be no significant adverse effects*".

The proposed change in the IWMF stack height does not alter the findings of the Gladman Development Environmental Statement or the cumulative impacts associated with its development alongside the IWMF.

A consultation on options for a new stretch of the A120 between Braintree and the A12 was launched on the 17 January 2017.

Five possible options are being considered for this section of the A120.



The A120 routing Options B, C, D and E will either cross the IWMF access road (Options B and C) and/or run to the north (Options B and C) or to the west (Options D and E) of the IWMF site.

The potential development and revised routing of the A120 would alter the baseline noise environment, and will more than likely result in the IWMF's day time noise conditions being revised to reflect the changed status in the noise climate. It is likely that the development of the A120 would result in a change to the character and level of the residual acoustic environment and soundscape, which could lead to an increase in local noise levels which may mask the low level noise emissions from the IWMF. However, any changes in the baseline noise environment likely to result from the revised route of the A120 in and around the site, would be offset against noise reductions along the route of the existing A120.

It is concluded that from a noise assessment perspective the EIA for the IWMF proposal and wider foreseeable developments in and around the site have been considered and assessed, and the overall conclusions remain the same.

APPENDIX 12A

Addendum Noise Assessment 2017

APPENDIX 12B

Addendum Environmental Statement 2015