WRITTEN REPRESENTATIONS

Submission to ExA 30th January 2023

Abstract

This written representation address points arising from the first two open floor hearings held on 12th January 2023 and the applicant's application for a Development Consent Order. Section A (paras 1 - 34) addresses Noise Pollution and mitigation measures challenging the applicant's assertion that only thin layer porous road surfacing is required to meet their obligations. Section B (Paras 35 - 38) addresses Light Pollution. Section C (paras 39 - 41 Air Quality Pollution and finally section D (Paras 42 – 46) addresses remarks made at the 2nd Open Floor hearing regarding J20a and makes a counter argument by proposing the applicant adopt the project of the Maldon Road Bypass scoped in TR010060/APP/6.3

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[redacted]

A. Pollution: Noise.

1. The original plans for the statutory consultation showed an "acoustic barrier" constructed at the top of the embankment on the southbound carriageway but not on the northbound carriageway. The reason given when this was questioned on the webinar of 28th July 2021 was it failed the public policy test of cost/benefit analysis due to the small number of residential properties affected on the north embankment (30 to 40) compared with the south embankment (200+).

2. During the supplementary consultation the documents published showed that the "acoustic barrier on the southbound embankment had been removed. The reason given was that the applicant had decided that the use of "thin layer porous road surface" as a sole mitigating measure produced a sufficient reduction in Lden noise to meet its obligations.

3. This is unacceptable for several reasons and there is evidence that supports the use of a multilayer noise mitigation strategy:

4. The stretch of A12 cutting through Hatfield Peverel is identified in round 3 of DEFRAs Noise Reduction Plan: Roads, as a Noise Important Area. (See Fig 1 ante)
5. This qualifies the affected area to receive designated funding for noise mitigation measures.
   National Highways have a policy document on both a & b.

   5.1.1. This is what their policy on the use of designated Environment and Wellbeing Fund says about Noise:

"**NOISE**

We know that reducing the noise from our roads can have a positive effect on the quality of life and wellbeing of people living near them. So, we're using this fund to reduce noise for communities close to specific noise 'hotspots' on our network. Our target is to help 7,500 households through noise mitigation schemes by 2025."

6. The reliance by the applicant solely on thin layer porous road surfacing is at odds with this statement and the obligations contained in round 3 DEFRAs Noise Action Plan: Roads 2019, Environmental Noise (England) Regulations 2006, dated 2 July 2019.

   The vision of the Noise Action Plan is set out in para 1.4 on page 7 & 8, and is to:

"*Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development."*

   Its aims set out in that paragraph on page 8 are to:
   - avoid significant adverse impacts on health and quality of life;
   - mitigate and minimise adverse impacts on health and quality of life; and
   - where possible, contribute to the improvement of health and quality of life.

7. Paragraph 1.6 lays out the requirement in the Environmental Noise Directive & Regulations for a 5 year strategic noise mapping to aid the implementation of a Noise Action Plan and Para 2, Scope of This action Plan in sub par 2.1 includes major roads as defined in footnote 5.

   Paragraph 3 Implementation of this Action Plan makes it clear that it is the Highways Authorities responsibility:

   "3.1 The responsibility for the management of noise from road traffic sources lies with the highway authorities. The implementation of this Action Plan forms part of their existing responsibilities in this area."

   Part B provides guidance on the approach to and for managing road noise.

In paragraph 6.1: The management of the roads covered by this Action Plan rests with the relevant highway authority through the implementation of the Highways Act 1980[6] (as amended). This includes

Highways England which is responsible for England's strategic road network[7]. The remaining roads are the responsibility of local highway authorities either as part of a County Council, a Unitary Authority or Transport for London.

"6.2 There are several possible approaches to control the impact of noise from road traffic, including:

- control of noise at source (including vehicle emission limit values). This should be considered first;
- planning controls – through the operation of the national and local transport and land use planning system;
- installation of mitigation on the road infrastructure (low noise road surfaces, noise barriers;
- compensation and insulation - in the case of new or improved highways;
- installation of mitigation at receptors (insulation).

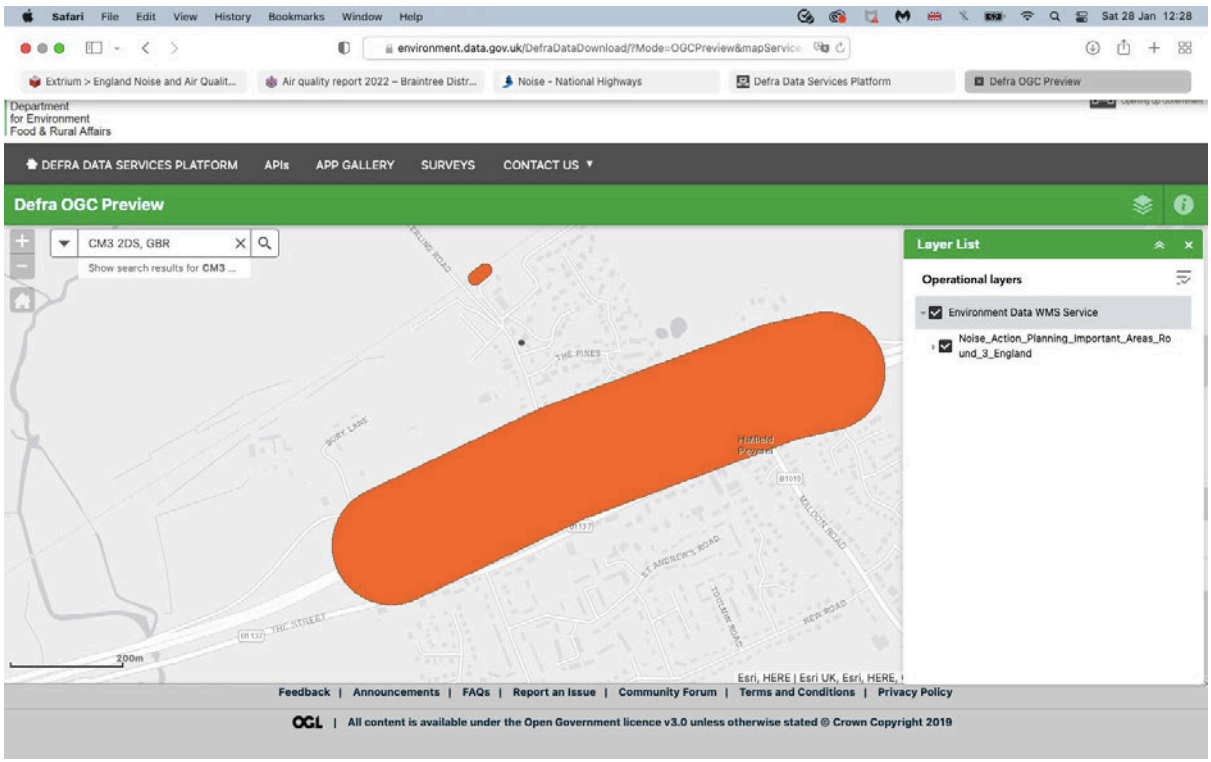
The plan goes on to say:

Noise barriers or other similar methods

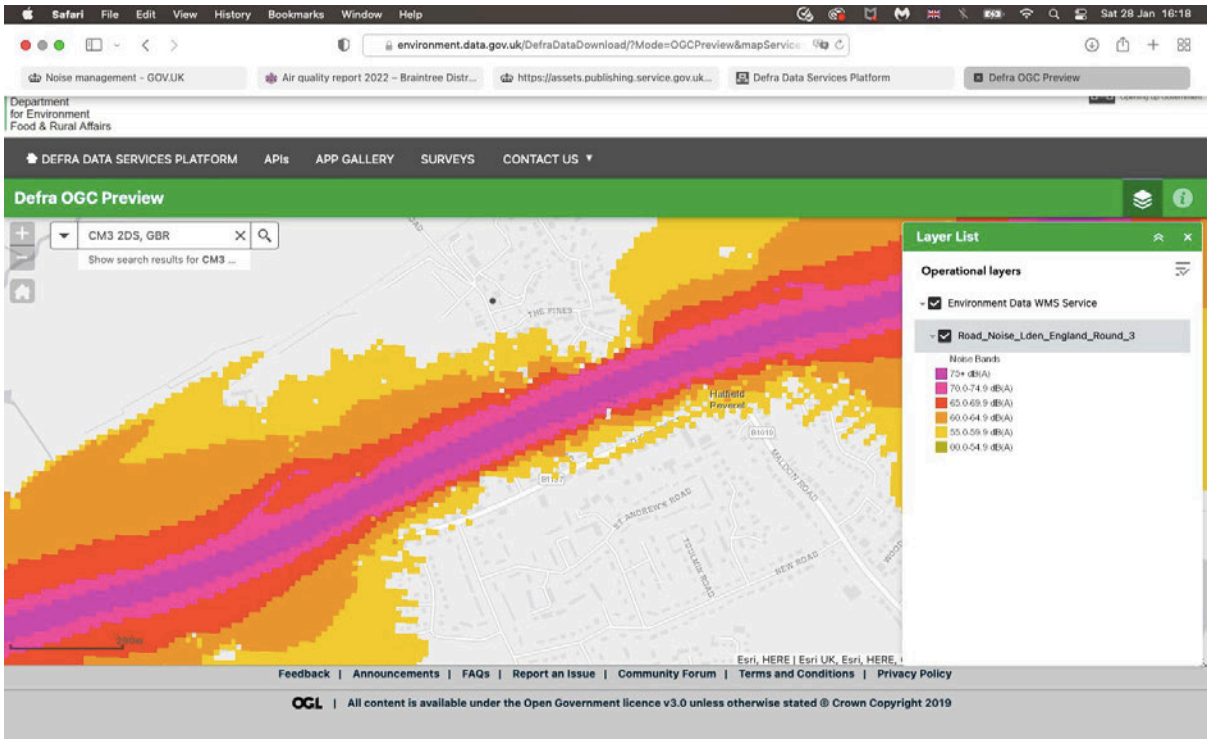
"6.9 There is widespread use of barriers to limit the noise from roads.
These include barriers alongside the roads themselves, landscaping and the built environment (with buildings being positioned to protect others from the source of noise). Noise barriers can reduce noise levels by up to 10 dB(A).

8. Part C of the Noise Action Plan: Roads, gives a summary of the noise mapping results and for the purpose of this submission this is best demonstrated by the inclusion of DEFRA's round 3 mapping results for the stretch of A12 between J20a & J20b:

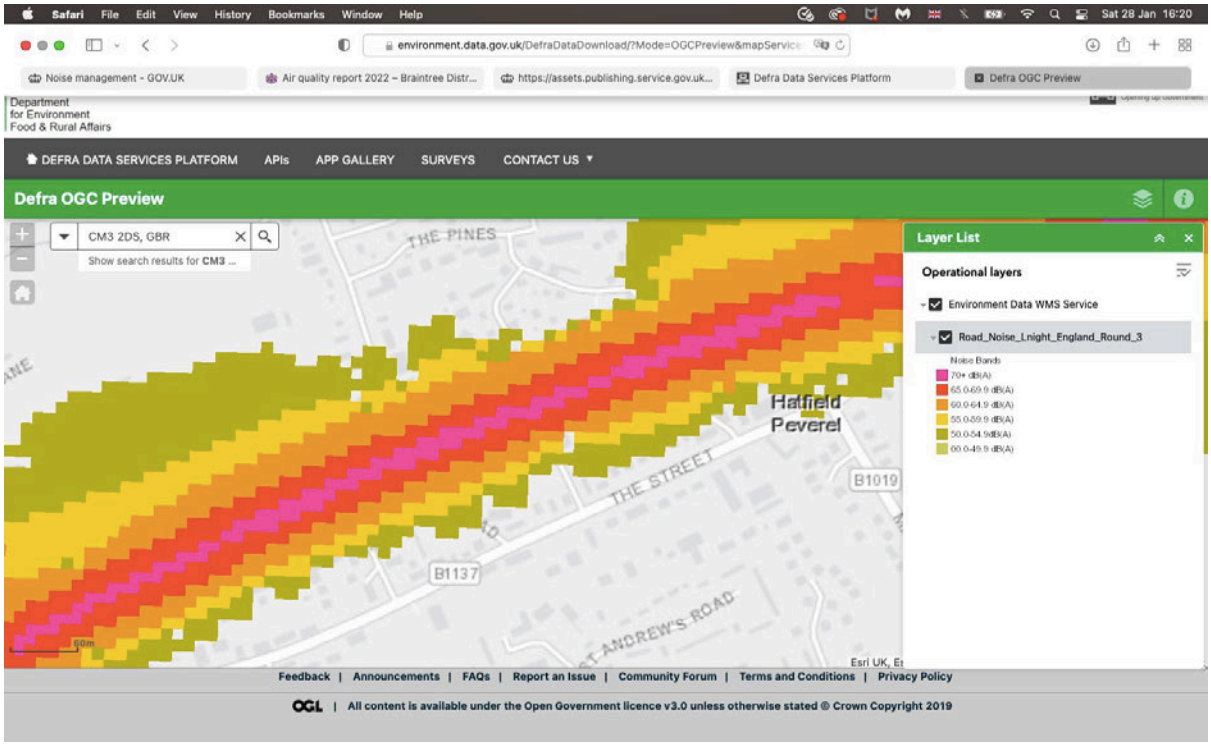
9. Fig 1: Showing A12 J20a to J20b as a Noise Action Planning Important Area under round 3 England



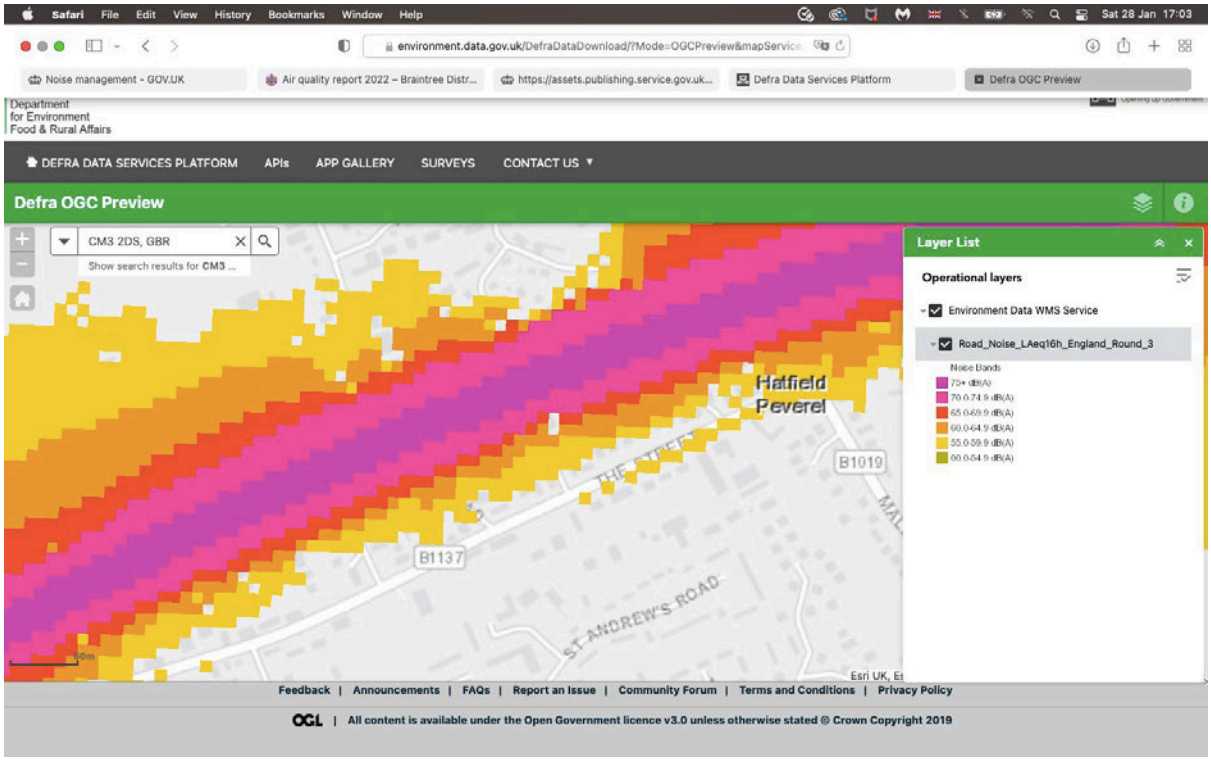
10. **Fig 2: DEFRA Lden Noise Mapping round 3**https://environment.data.gov.uk/DefraDataDownload/?mapService=DEFRA/RoadNoiseLdenRound3&Mode=spatial



11. Fig 3 DEFRA Lnight: Noise Mapping Round 3 <https://environment.data.gov.uk/DefraDataDownload/?Mode=OGCPreview&mapService=https%3A%2F%2Fenvironment.data.gov.uk%2Fspatialdata%2Froad-noise-lnight-england-round-3%2Fwms>

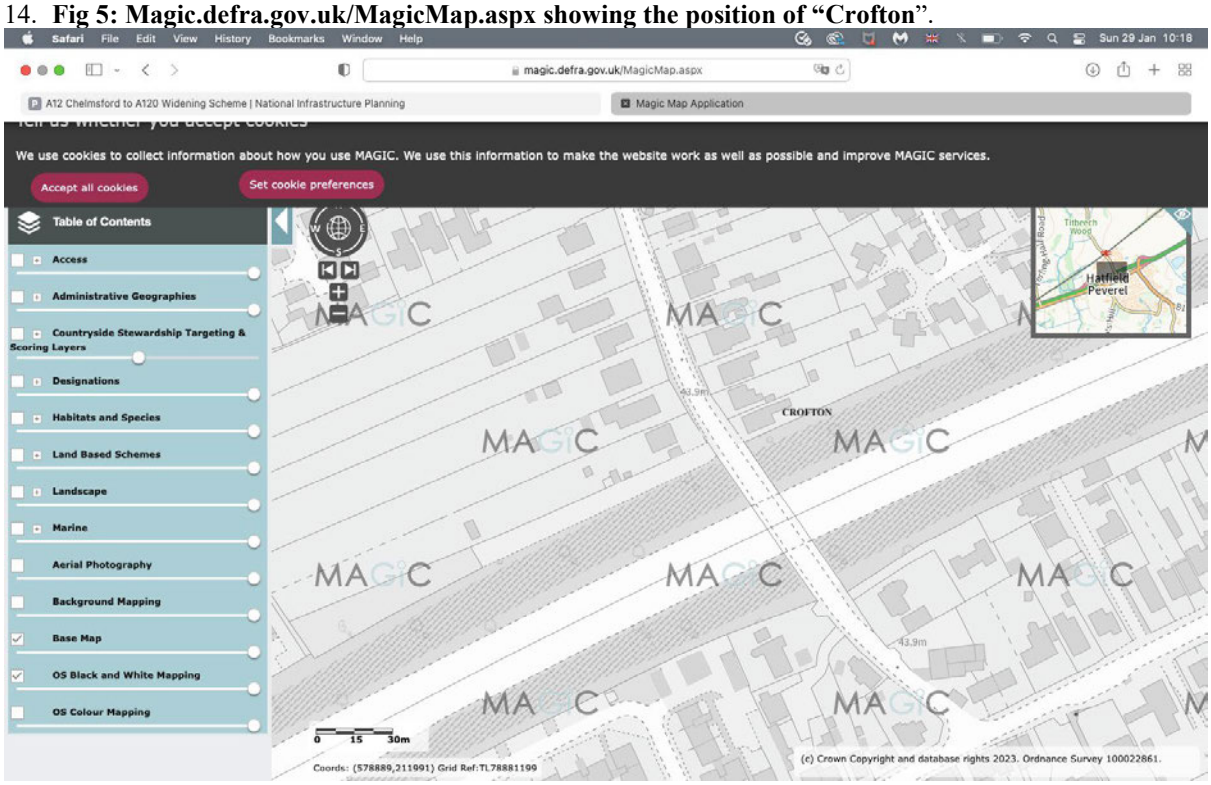


12. Fig 4 DEFRA LAeq16hr: Noise Mapping Round 3
https://environment.data.gov.uk/DefraDataDownload/?mapService=DEFRA/RoadNoiseLAeq16hRound3&Mode=spatial



13. The Property "Crofton", comprising of two Land Registry Numbers EX369872 & EX421678 sits on the north embankment of the A12, immediately adjacent to Station Road bridge and in the middle of the cutting between J20a & J20b. It's south facing wall is the receptor façade for the noise emanating from the A12.

14. **Fig 5: Magic.defra.gov.uk/MagicMap.aspx showing the position of "Crofton"**.



15. As Fig 1 to Fig 4 show; for properties at the top of the embankment, both south and north, the receptor walls fall within the noise range of Lden 70-74.9dB(A) and borderline between Lnight 65 - 69.9dB(A) & Lnight 60.0 – 64.9dB(A). The centre of the postcode CM3 2DS on Station Road shows average range of noise pollution to be within Lden 60.0-64.9dB(A). Marina Close shows a constant exposure average of Lden 60.0-64.9dB(A) and Rookery Close shows an exposure of Lden 55.0-59.9dB(A)

16. These far exceed World Health Organisations recommendations for noise exposure. It is widely accepted that levels of noise that are above the levels quoted give rise to; reduced quality of life, increased mental health issues, increased risk of cardiovascular disease, sleep deprivation, levels of annoyance, and hearing loss.

17. **Fig 6.** World Health Organisation. Environmental Noise Guidelines for European Region. ISBN 978 92 890 5356 3 page xvii.

Road traffic noise

Recommendation	Strength
For average noise exposure, the GDG strongly recommends reducing noise levels produced by road traffic below **53 decibels (dB)** L_{den}, as road traffic noise above this level is associated with adverse health effects.	Strong
For night noise exposure, the GDG strongly recommends reducing noise levels produced by road traffic during night time below **45 dB** L_{night}, as night-time road traffic noise above this level is associated with adverse effects on sleep.	Strong
To reduce health effects, the GDG strongly recommends that policy-makers implement suitable measures to reduce noise exposure from road traffic in the population exposed to levels above the guideline values for average and night noise exposure. For specific interventions, the GDG recommends reducing noise both at the source and on the route between the source and the affected population by changes in infrastructure.	Strong

18. For the most part the noise pollution is generated by tyre rumble and wind rush. Both these are significantly affected by the speed of traffic over the road and the road surface itself. The use of "thin layer porous road surfacing" is estimated by the applicant to reduce the noise pollution by 1-3dB(A).

19. The primary purpose of the proposed development is to reduce journey time by keeping traffic moving at a constant speed closer to the maximum permitted by law than is currently the case. The applicant quotes potential travel time savings from J19 to J24 and vice verca to be in the range of 15 minutes.

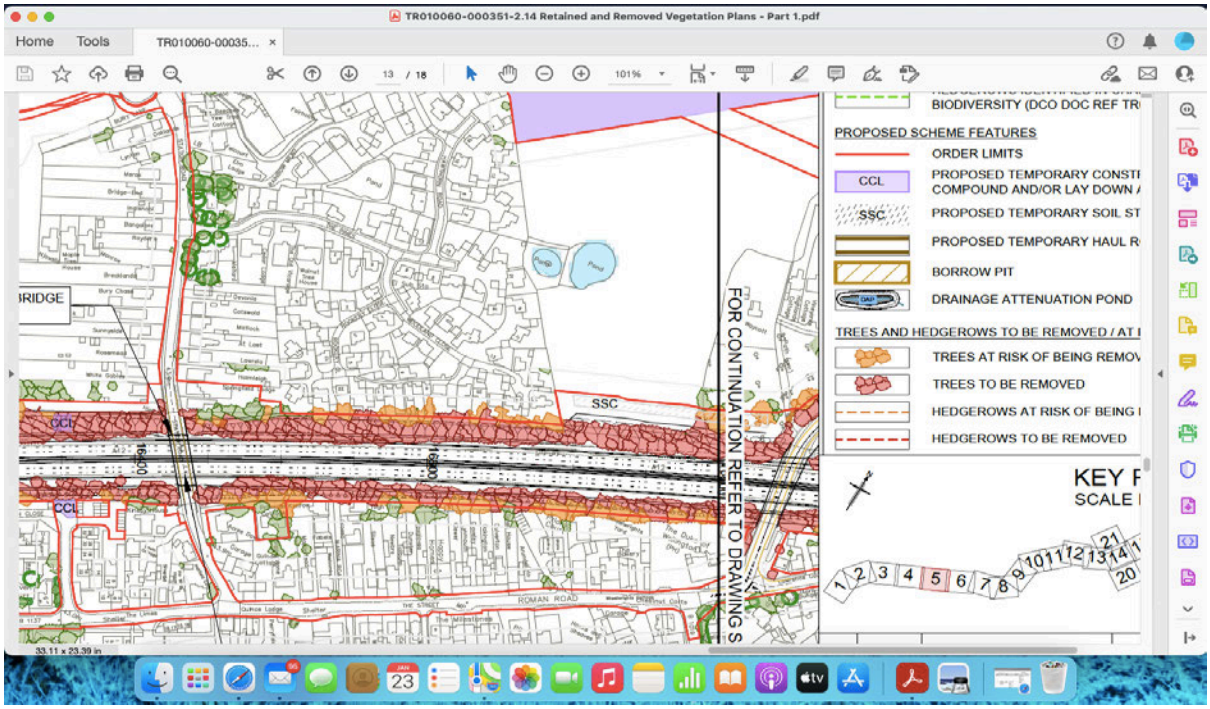
20. It is also intended that it should divert traffic off local roads onto the A12 thereby increasing the number of vehicles passing through the cutting dissecting Hatfield Peverel between J20a & J20b

21. The road is being widened and moved closer to the receptor residences already adversely affected, thus increasing the adverse effect of noise by bringing it closer.

22. These measures will, de facto, increase the dB(A) Lden & dB(A) LAeq16h & Lnight of the residences along both embankments beyond these levels and runs counter to the Noise Reduction Plan (Roads) 2019 unless multi-layer noise mitigating measures are implemented.

23. It is also proposed that prior to construction taking place the vegetation along the embankment will be removed. Whilst this is an obviously sensible measure it will increase the noise level significantly. I can find no satisfactory mitigating measures in the applicant's application for the DCO. This will take years to replace.

24. **Fig 7.** Showing planned removal of vegetation on embankment between Station Rd Bridge & Wellington Bridge(B1019)



25. For these reasons I would disagree with the applicant's assertion that the only noise reduction measure they need to take to meet their obligations is thin layer porous road surfacing. Unless a multi-layer approach to mitigating noise pollution is taken, Hatfield Peverel will be poorly served by the applicant. To improve matters:
26. The applicant could; as well as using thin layer porous road surfacing materials, implement other measures such as:
27. **Noise Barriers:** As stated in 1. Above, the original plan in the initial consultation documents showed an acoustic noise barrier along the top of the southbound embankment adjacent to the boundaries of the properties along that embankment, but no similar barrier on the northbound embankment. The south embankment barrier was removed by the time of the supplementary consultation documents were issued. The reasons given are those in 1 & 2 above.
28. What is clear from DEFRA's Noise Action Plan : Roads 2019, as quoted in para 7 above, in their para 6.9, is that noise barriers can be effective in reducing noise levels significantly. How effectively it does this is governed by several factors:
    - Frequency pitch of the sound.
    - Materials the barrier is constructed from.
    - Distance from the source of the sound.
    - Height of the barrier
    - Design of facia of barrier.
29. The proposed position of the noise barrier flew in the face of received research and best practice. This shows that noise barriers are more effective when constructed close to the source of the noise. Also, the type of barrier constructed was a key element in the effectiveness of the barrier against noise pollution.
    The type initially chosen then abandoned was an acoustic one. This would have the effect of deflecting noise. It would in effect make the A12 cutting an echo chamber. Noise levels would be amplified by the rebound or echo of the noise bouncing off the acoustic barrier & embankment. Research has shown that a noise absorption barrier would be more effective.
30. The best position for the barrier would be for it to be built as part of the retaining wall for the embankment and that it should be a minimum of 3 metres high. As stated in DEFRA's Noise Action Plan: Roads 2019, this could have the effect of reducing noise pollution by up to 10dB(A)
31. **Speed:** The purpose of the project is to increase the steady rate of speed to reduce the length of journey time. Research has shown that a decrease in speed results in reduced levels of noise.

Fig 8 A report commissioned by the UK Noise Association. Researched and written by Paige Mitchell December 2009 "Speed and Road Traffic Noise" page 9

Table 2: Effect of speed reduction on traffic noise for light and heavy vehicles (Source: Ellebjerg 2008a:14, Table 2)

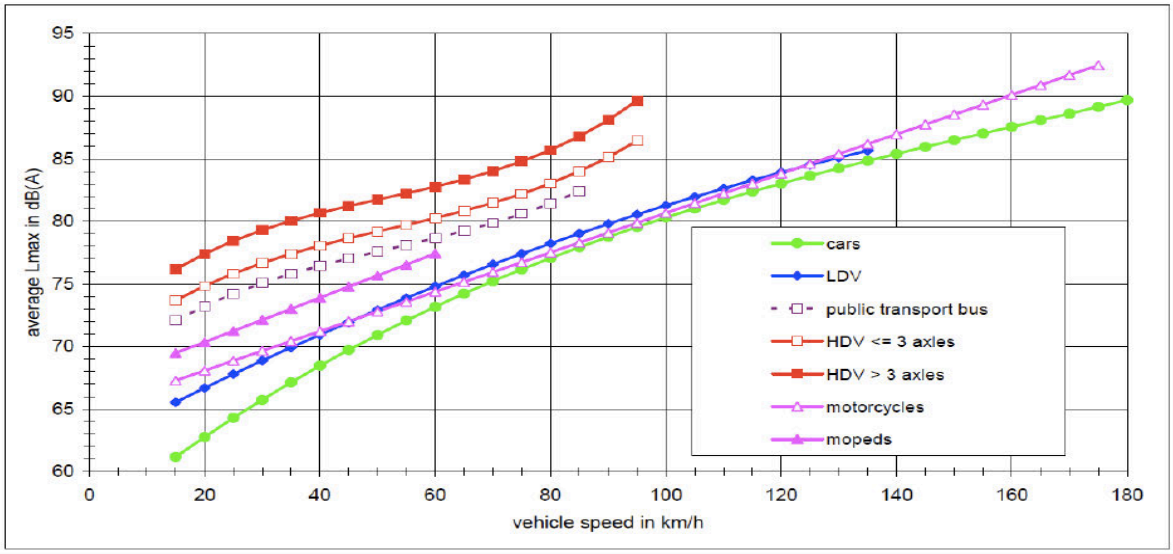
Reduction in speed		Noise reduction (LAE, dB) - light vehicles	Noise reduction (LAE, dB) - heavy vehicles
km/h	mph		
40 to 30	25 to 19	3.6	2.7
50 to 40	31 to 25	2.8	2.1
60 to 50	37 to 31	2.3	1.7
70 to 60	44 to 37	1.9	1.4

Road traffic noise: the impact of speed
There is a measurable link between traffic noise and speed. In urban areas with speeds of between 20 and 35 mph, reducing speeds by 6 mph would cut noise levels by up to 40%. Reducing 70mph and 60mph speeds on urban motorways would cut noise by up to 50%. Page 3.

Fig 9 A report commissioned by the UK Noise Association. Researched and written by Paige Mitchell December 2009 "Speed and Road Traffic Noise" page 9

Traffic Mix

Figure 4: Average maximum noise emissions for different vehicle types in free flowing traffic



(Source: Ellebjerg 2008a:12, Figure 2.1)

32. A reduction from 70mph to 50 mph (113km/h to 80km/h) has a significant reduction in maximum continuous noise. The applicant should consider speed control measures through the Noise Important Area of the A12 between J20a & J20b cutting through the community of Hatfield Peverel, reducing the speed limit to 50mph.
33. **Vegetation:** The removal of vegetation mentioned in para 23 and Fig 7 will exacerbate the noise levels. Although the current state of vegetation along the cutting between J20a & J20b has been poorly husbanded by the applicant leading to much of it being thin, feeble, diseased, and dead, it still has some small noise mitigation impact. The choice of deciduous vegetation was and will be again, in my view, a mistake. The noise mitigation of such vegetation is diminished in late autumn and winter. The noise level from tyre noise

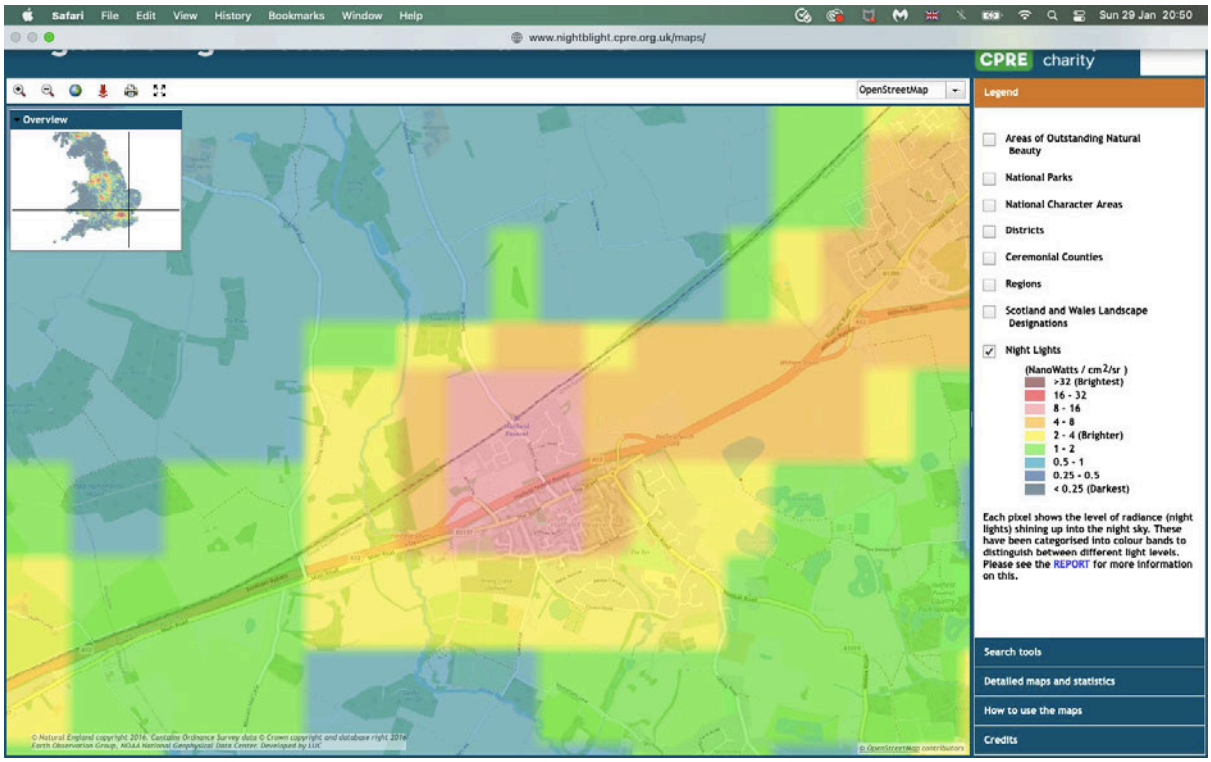
is greater during these seasons as the road surface is generally wet. I suggest that there are enough native evergreen plants to facilitate improved screening and noise reduction by planting them instead of the deciduous varieties. They would also improve combatting air pollution.

34. **Conclusion:** These noise mitigation measures would go further to assisting the applicant meet their obligations imposed under legislation in meeting the recommended noise levels than their proposals do. Legislation has granted them considerable powers to enable them to do so. Failure to use those powers to meet their obligations would be an abject abdication of their responsibilities. Using cost as a reason is unacceptable. The applicant has access to ringfenced funding for just this purpose. Speed reduction comes at zero cost to the applicant and contributes to a safer driving experience. The use of thin layer porous road surface is welcome but insufficient on its own to achieve the aim of reducing noise to an acceptable level. The surface will deteriorate over time and its efficacy lost. The applicant is unlikely to resurface based on loss of noise reduction capability alone and so within 3 to 4 years the result will be a road as noisy as now rendering that small investment ineffective and wasteful. The noise reduction barrier if constructed properly will have a life expectancy of approximately the length of the project. Planting of suitable vegetation with greater sound absorption than deciduous varieties will assist. It is clear and logical the solution to the noise pollution problem is a multi-layered strategy.

B: Pollution: LIGHT.

35. Research by the Countryside Charity indicates the stretch of A12 that cuts through Hatfield Peverel endures light pollutions levels more than 3.3 nanowatt/cm2 the third highest level of light pollution. The effect of bringing the road lights along the cutting closer to the residences along both north and south embankments of the cutting by nearly 20 feet will have the effect of having the streetlights just outside any bedroom window facing the A12 such is the height of these lamps, thus increasing the level of light pollution.

Fig 10. [redacted] > accessed 20:54hrs Sunday 29th January 2023.



36. That Hatfield Peverel is amongst the brightest lit areas in Braintree District is largely due to two factors:
    a) The A12 road lights. These were raised in height in 2002 and given greater luminosity to improve road safety at night. Whilst the angle of the light was more downward there is still sufficient light spillage to be nuisance for residences with windows facing the A12. The height of the lamp is on a level with the upstairs windows.
    b) The railway staion to the north of the A12 cutting.
37. The radiance of the luminosity is measured in NanoWatts / cm2sr and places Hatfield Peverel along the A12 and up to the railway in the 3rd highest band for night radiance.

38. It has taken decades for the current vegetation to reach a height that partially screen this source of light pollution.

C: Pollution: Air Quality.

https://www.braintree.gov.uk/downloads/file/3583/air-quality-report-2022 last accessed 21:45 Sunday 29th January 2023.

39. Braintree District has NO2 Diffusion Tube points to measure air quality in Hatfield Peverel. One is situated at Bury Lane intersection with the B1137 and the other at Maldon Road B1019 intersection with the B1137. There are no measuring stations north of the A12 corridor in Hatfield Peverel.
40. Braintree District Council has no AQMAs. This is unlikely to continue given the expansion of traffic along the A12 corridor and the new DEFRA targets on PM2.5
41. I agree with the points made by Mark East at the 1st open floor hearing held at 2pm on 12th January at 1 hour, 40 minutes into the recording.

D: Traffic diversion & The Maldon Road bypass.

42. During the Open Floor Meeting held in the evening of 12th January at 13m:13s, Mr Charles Martin of the Conservation Society of Boreham made verbal representations on a design he had made to keep J20a southwest bound on the A12 open. I can see the benefits to Boreham, but these come at a cost to Hatfield Peverel. His proposal is based on the assumption that drivers wishing to access the A12 southbound would either turn left at the junction of the B1019 Maldon Road with the B1137 The Street or turn left onto Church Road from the B1019 Maldon Road and then left when they reach the junction of Church Road with the B1137 The Street, in order to access the A12 at J19 at Boreham rather than turn right to go over the Wellington Bridge to access the new J21 which would seem counterintuitive as that would mean going in the opposite direction than that they would require to travel initially. His assumption that the level of traffic that is anathema to Boreham is tolerable to Hatfield Peverel indicates a narrow view taken. His proposal would increase the temptation for drivers wishing to head south on the A12 to do just that, thus increasing the volume of traffic through Hatfield Peverel portion of the B1137 to Crix where his proposed roundabout to join the A12 at the existing J20a is to be situated. This would be unacceptable to residents in Hatfield Peverel.
43. The counterargument is to make the case for the applicant to assume the responsibility for the construction of the Maldon Road bypass to join at J21. See TR010060/APP/6.3
44. Should the applicant be persuaded to do this, it could be done at the same time, and as part of, the construction of J21.
45. This would have the effect of removing most of the traffic from the B1019 where it enters Hatfield Peverel, alleviating traffic congestion at the junction of the B1019 and B1137 and would at the same time reduce traffic seeking to join the A12 at J19 Boreham Interchange.
46. In TR010060/APP/6.3 on pages 8 & 9, table 3.1 evidences that the applicant has been in discussion with ECC, BDC & MDC on this project since early 2017. Given the strategic benefit to the region overall it is surprising that this project is so far behind the curve.
47. That concludes this submission. Thank you.

Angela J Carter & Antony J Carter
Crofton.

Conclusion

The proposals as they stand will exacerbate two nuisances to an unacceptable degree without sufficient measures taken to mitigate the effect they have on the community. Both can be argued to engage ECHR art 8 and Protocol 1 art 1 rights, in particular the noise nuisance.