

PRC report and related appendices (forms part of the main agenda pack) for Planning Review Committee - Wednesday 15 March 2017

3. **East West Rail Phase 1 - 2 applications** (Pages 3 - 24)

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PLANNING REVIEW COMMITTEE

15th March 2017

Application Numbers: 16/02507/CND for route section H

16/02509/CND for route section I-1

Decision Due by: 21 November 2016

Proposal: Details submitted in compliance with condition 19 item 2 (operational noise and vibration) of TWA ref: TWA/10/APP/01 (The Chiltern Railways (Bicester to Oxford Improvements) Order - deemed planning permission granted under section 90(2A) of the Town and Country Planning Act 1990).

Site Address: Chiltern Railway From Oxford To Bicester (**East West Rail Appendix 1**)

Wards: Wolvercote, Summertown, and St Margaret's

Agent: ERM

Applicant: Network Rail

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1. This covering report should be read in conjunction with the officer's report, dated 13th February 2017, to West Area Planning Committee on 21st February 2017 attached as an **Appendix – report to 21/02/17 west area planning committee**.
 2. The applications concern the partial discharge of condition 19 of the deemed planning permission for East West Rail Phase 1 (ref TWA/10/APP/01), namely discharge of the Noise Scheme of Assessments (NSoAs) for route sections H and I-1.
 3. Essentially, the decisions which are needed are:
 - i. whether the installation of rail damping is reasonable practicable; and,
 - ii. whether it is reasonable to retain a planning condition which restricts the pattern of rail services.

Introduction

4. At the West Area Planning Committee on 21st February 2017, Members resolved to approve the NSoAs with three conditions attached, two of which had not been recommended by Officers (Minutes attached as an **Appendix – Minutes 21/02/17 west area planning committee**). Those two conditions concern rail damping and restrictions on the patterns of rail services and read as follows:

2 Within three months of this partial approval under condition 19 of the deemed planning permission, proposals shall be submitted for the written approval of the local planning authority showing how at-source noise

attenuation by rail damping to at least the standard achievable by the use of Tata Silentrail can be incorporated into the scheme. The development to which this approval relates shall not be brought into operation EITHER without that written approval having been obtained and other than in accordance with such approved details OR without the Council having given written confirmation that it is satisfied that the provision of such rail dampening is not reasonably practicable.

Reason: The local planning authority is not satisfied that rail damping as an at source mitigation measure has been shown to not be reasonably practicable in the absence of any attempt on the part of the applicant to secure approval for the use of such a measure.

3 Passenger train movements on Section H between 0700 hours and 2300 hours shall not be in excess of 8 movements per hour. Freight train movements between 2300 hours 0700 hours on the following day shall not exceed 8.

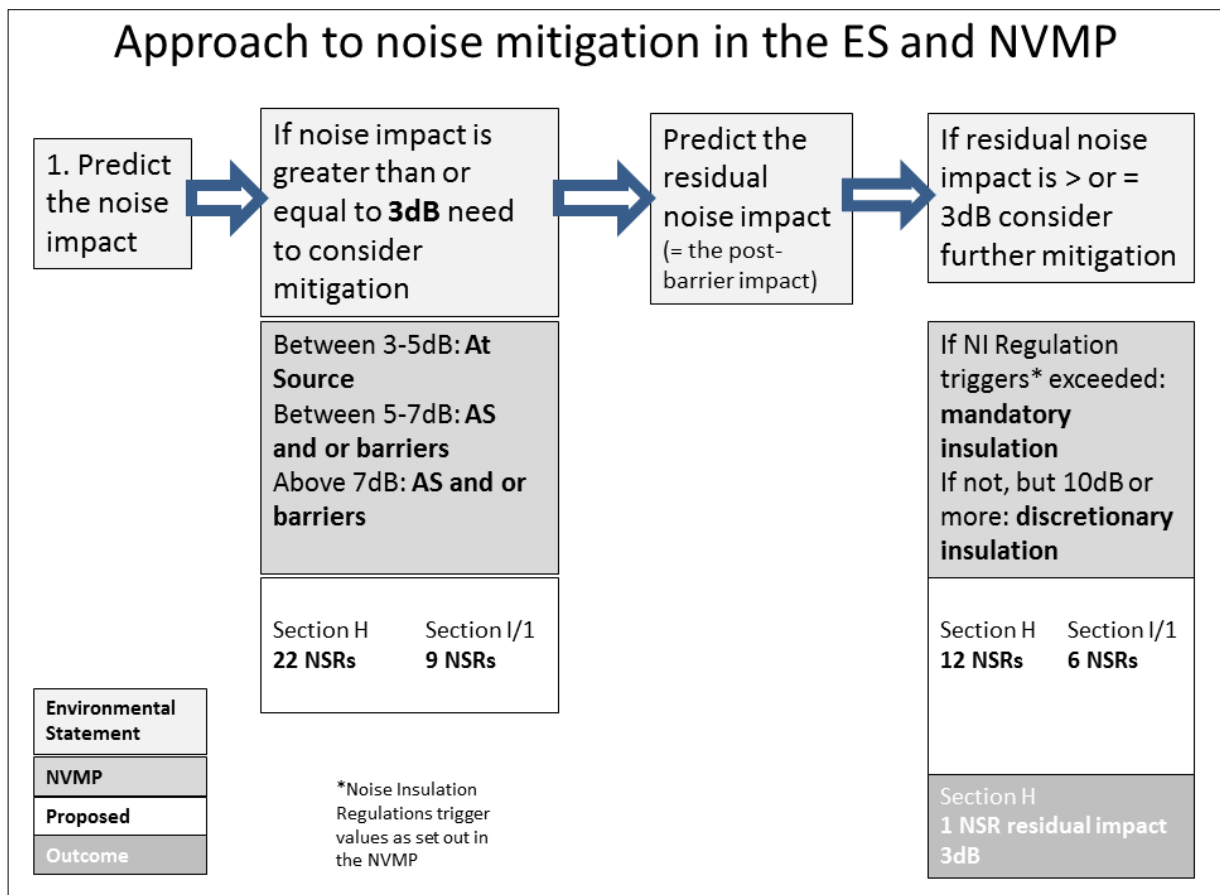
Reason - to ensure compliance with condition 19 of the planning permission deemed to have been granted (ref TWA/10/APP/01)

5. The applications have been called-in to the Planning Review Committee by Councillors Cllrs Hollingsworth, Upton, Kennedy, Fooks, Simm, Taylor, Clarkson, Sinclair, Henwood, Tanner, Lygo and Turner.
6. The call-in is on the grounds that the West Area Planning Committee decision of 21 February 2017 has continued with the imposition of the above two conditions against the advice of the council's external technical advisor Arup, the advice of Queens Counsel and the advice of the Head of Planning and Regulatory Services. The risks to the Council in the event of an appeal being lodged against these conditions and the ability for the Council as local planning authority to be able to defend this decision at appeal need to be reviewed.
7. This covering report provides some additional analysis of the issues, and aims to ensure that the Planning Review Committee, acting as local planning authority, has the opportunity to consider afresh all material facts, independent advice and potential risks to the Council:
 - i. it explains the decision sequence and considerations that the PRC decision must take account of;
 - ii. it sets out the background and context for rail damping more broadly for PRC members understanding and appreciation; and,
 - iii. it provides more detailed analysis of public comments about the case and how those comments are addressed by the technical and legal advice from Arup and Queen's Counsel (QC).
8. The Council has taken the mitigation of operational noise (and vibration) very seriously over a prolonged period and has instructed independent experts to assist it both on the technical and legal side. The Council has enabled significant public involvement in the process and has examined public responses thoroughly.

Through diligent pursuance of the requirements of the NVMP the set of points originally proposed at Bladon Close was moved; extensive noise barriers have been installed, tailored to local circumstances at Quadrangle House and Bladon Close; and noise insulation beyond statutory requirements has been secured. Mitigation at source (rail damping) has been pursued in detail and the report demonstrates that the Council as local planning authority can now be confident that to install rail damping is not reasonable practicable.

Decision sequence for Noise Mitigation

9. This is a very complex technical area. To assist the Committee, the diagram below summarises the decision making sequence which has been applied to determine the necessary mitigation of noise impacts in the two NSoAs. In the diagram, ES = Environmental Statement; NVMP = Noise and Vibration Mitigation Policy which was approved by the Secretary of State as part of the deemed permission.
10. The outcome (bottom right hand box) of all the mitigation applied (barriers and insulation) is that all significant noise impacts are mitigated apart from at one Noise Sensitive Receptor (NSR), a property in section H where there is a residual (post barrier) impact of 3dB.



Rail damping - background

11. Rail damping is a form of 'at source' rail noise mitigation which involves the installation of steel sections embedded in an elastomer coating which are clipped at intervals along each side of each rail. Rail damping can help to reduce noise that is radiated from the rails themselves, but it does not mitigate any of the engine, traction, wheel or other noise from locomotives and rolling stock. SilentTrack is the trade mark of a rail damping product made by TATA Steel.
12. Rail damping for EWRP1 had been examined both in the Environmental Statement and at the Public Inquiry. When the Secretary of State gave deemed planning permission for EWRP1 in October 2012, the NVMP was also approved which states that 'at source' mitigation including rail damping is the first preference for noise mitigation if it is reasonably practicable – where 'at source' measures are not reasonably practicable or sufficient to mitigate significant noise impacts, barriers and noise insulation are provided for (NVMP para 2.2).
13. When the NSoAs for route sections H and I-1 were first submitted to the Council, rail damping was not proposed as a mitigation measure because it was not 'Type Approved' by NR for use on high-speed tracks such as those proposed for EWRP1. Rail damping is in use at only one other location in the UK which is a low speed line at Blackfriars in London. NR's case was that rail damping was not available for use – the question posed in the NVMP however was not whether rail damping was available for use but whether it was reasonably practicable to install.
14. The NSoAs were approved in June 2015 and February 2016 respectively, because the Independent Experts and the Council's appointed expert, Arup, agreed that the NSoAs were robust and the mitigation requirements of the NVMP would be met. The Council as local planning authority took the view however, as recommended by officers, that NR should be required to demonstrate whether rail damping was reasonably practicable and imposed condition 2 above to secure that analysis. The condition stated that services should not operate on the line until either a scheme for the installation of rail damping had been approved or the Council had confirmed that it agreed that the provision of rail damping was not reasonably practicable.
15. In 2016 NR applied to the Council to have condition 2 lifted on the grounds that rail damping was not reasonably practical. Officers advised the West Area Planning Committee in September 2016 that NR had not demonstrated that rail damping was not reasonably practicable. Based on that officer advice the Committee refused the applications. Construction of the line continued and train services commenced in December 2016 but without the necessary approval/confirmation under the Council's condition.
16. Prior to making a planning appeal against the Council's September decision, NR has resubmitted the approved NSoAs to allow the Council time to re-

consider the imposition of the rail damping condition (and the condition restricting the pattern of train services). That reconsideration is the purpose of this report.

Analysis of key public comments

Comment - Rail damping will provide 4.4dB noise mitigation not 2.5dB to 3dB as claimed by NR and Arup.

17. Arup has reviewed the comments made by local residents, and in particular those made by Professor Buckley (**PRC Appendix 2**) which refer to Prof Thompson's estimates of the likely performance of rail damping in the UK. Arup maintains its view that 2.5dB is a reasonable estimate of the performance of rail damping though reiterates that, without undertaking further laboratory based testing and prediction work, a "best estimate" cannot be determined. Given this situation, Arup acknowledges that the alternative performance estimate provided via Professor Buckley should be taken into account as a potential outcome for the performance of rail dampers on EWR, albeit for a different damping product to SilentTrack and for a single type of rolling stock (**PRC Appendix 3**).
18. QC has reviewed the evidence and commentary supplied by NR, Arup and local residents (including the comments of Professor Buckley) and makes the assumption that "rail damping may mitigate noise impacts by 2.5dB" (QC Advice, para 4).
19. The debate as to whether rail damping provides 2.5dB or 4.4dB mitigation is not central to the Committee's decision however, because only one property has been identified as experiencing a residual (post barrier) noise impact of 3dB.
20. The scheme is not required to mitigate for noise at open windows, in open areas or in gardens - paragraph 2.6 of the NVMP refers to "*the noise levels predicted at the most exposed windows to noise sensitive rooms in noise sensitive buildings*".

Comment - NR is obliged to provide rail damping: the Secretary of State required rail damping to be provided as a planning condition for this development. The credibility of the planning process depends on the requirements of the original conditions being met.

21. The NVMP requires mitigation to be provided and sets out a sequential approach to the consideration of mitigation measures. It views rail damping as a first preference. However, the Council has already approved the barriers and they have been constructed. The question now is whether rail damping is required and is reasonably practicable in addition to, and not as a substitute for, the barriers.
22. Queen's Counsel advises that he "*cannot read the NVMP as always requiring 'at source' first irrespective as to the facts, the context and the efficacy of the*

various optionsThe NVMP does not require 'at source' if the other measures already provided will achieve the objectives" (QC Advice, para 77).

Comment - NR has reneged on its promises to provide rail damping. NR is being underhand and seeking to maximize profit. The Council must resist this attempt to override the planning system and stand up for the interests of local people.

23. The original Public Inquiry examined the possibility of providing rail damping. At a public meeting in 2015 at which the Rail Minister was present, NR representatives indicated that they would examine the possibility of providing rail damping by seeking Type Approval for its installation. At the same meeting the Minister urged NR to work hard to achieve Type Approval and followed that up with a letter to NR.

24. The task for this Council is to discharge the planning conditions of the deemed planning permission, as written and as the situation is at the current time – i.e. on the basis of what it has before it, irrespective of statements or promises around the subject made by relevant parties before or after the deemed planning permission was issued. It follows that whether or not it can be established that NR has reneged on a promise to provide rail damping is irrelevant to the Council's decision because such promises, if they exist, do not form part of the deemed planning permission issued by the Secretary of State.

23 It is fully appreciated that the existence of such discussions and perceived promises may lead local communities to have certain expectations from Network Rail. However the council as local planning will be required to judge the situation against the requirements of the NVMP.

Comment - The noise and vibration modelling is flawed. Without rail damping the noise environment for hundreds of children and thousands of residents will be intolerable. Without rail damping the internal and external learning environment at Phil and Jim School will be unacceptably impacted, and the children's health will be badly affected

25. The Independent Experts for noise and vibration agreed that the submitted Noise and Vibration Schemes of Assessment (planning applications refs 13/03202/CND, 14/00232/CND, 15/00956/CND, 15/03503/CND and 15/03587/CND) are robust in their prediction of operational noise and vibration, and that the predicted significant noise impacts will be sufficiently mitigated by the noise barriers and insulation proposed by NR.

26. Based on the advice of the Independent Experts the WAPC has already approved the Noise and Vibration Schemes of Assessment for route sections H and I-1 and so has given its approval to the predictions of operational noise and vibration and the mitigation proposals made by NR.

27. While local residents fear that the noise environment will be intolerable, the Secretary of State in giving approval to the scheme has concluded that with mitigation in place in accordance with the NVMP, the noise (and vibration)

environment will be acceptable. The WAPC has previously concluded that operational noise and vibration will be mitigated in line with the deemed planning permission. Through these current applications, officers, Arup and Queen's Counsel have re-visited the Noise Schemes of Assessment and have reaffirmed that they are robust leading to a recommendation that they be approved. The local noise (and vibration) environment will therefore be as the Secretary of State intended.

Comment - Concerns about the costs of a possible appeal is not good reason to cave in to NR's tactics

28. The Council as local planning authority has scrutinised all the material submitted as part of these applications and all the public comments made. It has thoroughly challenged NR's arguments and has employed external technical experts and taken the advice of Queen's Counsel. The point now reached is that the scheme meets the requirements of the NVMP and thereby, the requirements of the Secretary of State.

29. It would not be reasonable for the local planning authority to pursue this any further and the risks and costs of so doing need to be considered fully at this stage. The Monitoring Officer's Report (appended **PRC Appendix 4**) sets out that consideration in full.

Comment – NR's assessment of the costs of installing rail damping lacks a clear methodology, reveals significant contradictions and cannot be relied upon.

30. NR's methodology for estimating the costs of applying rail damping have been assessed by Arup and found to be appropriate.

Comment - Without restrictions on the number and patterns of trains the predictions of operational noise and vibration are invalidated. The predictions of operational noise and vibration do not take account of future increases in passenger and freight services on the line. Noise and vibration will be much worse leading to a need for greater mitigation.

31. The Secretary of State has set out in the NVMP (at paragraphs 1.8 to 1.10) the train number and timing assumptions that are to be used in modelling (known as the reasonable planning scenario) and provides that noise mitigation will be designed based on those assumptions. The Secretary of State has already anticipated and sanctioned the future traffic patterns which should be taken into account in the design of the scheme. The advice from the Queen's Counsel is that the council cannot override this accepted position in the deemed planning permission.

32. It can be noted that the reasonable planning scenario includes future passenger and freight services using East West Rail Phase 2 (Bicester to Bletchley).

33. The Queen's Counsel states that on the basis of paragraphs 1.8-1.10 of the NVMP the Noise and Vibration Schemes of Assessment are not required to address any possible future growth in rail traffic (QC Advice, para 84)

Comment - Restrictions on the speed of trains are needed to help reduce noise and vibration

34. Restrictions on the speed of trains do not form part of the deemed planning permission and cannot be imposed unilaterally by the Council. The source permission was granted by the Secretary of State and the Council has to abide by that.

Comment - De-vegetation has increased noise impacts and ruined the appearance of the area

35. Several residents have claimed that removal of vegetation has either increased or would be likely to increase perceived noise levels. This is not a factor explicitly referred to in the Noise and Vibration Mitigation Policy.

36. When the NSoAs were considered by Committee in 2015 and 2016 the Independent Expert was asked to comment on the relevance of trees to sound propagation. He advised that a band of trees several hundred feet deep is required to achieve significant noise attenuation. He also pointed out that the noise prediction calculations in the Noise Scheme of Assessment are appropriate. Taking these comments into account it is clear that the loss of trees and other vegetation is not material to the determination of the noise impacts.

37. On the visual impacts, it should be noted that NR is at liberty to remove vegetation within its operational land; and that the deemed permission does not require landscaping or tree planting in route sections H and I-1. NR is however re-planting where feasible to do so at the conclusion of the construction (see pp 37 and 52 of Appendix 2 hereto).

Comment - Monitoring of noise and vibration needs to start now so that a proper baseline can be established and the effects of trains in heavily populated areas can be studied and mitigated

38. The NVMP requires monitoring only of the mitigation measures installed. The source permission and the NVMP were specifically approved in this way by the Secretary of State and the Council has to abide by that. The council has already approved NR's monitoring proposals pursuant to this policy and there are no reasonable grounds for this Committee to change those views at this stage.

Comment - Impacts of diesel fume pollution

39. Air pollution is not the subject of condition 19 of the deemed permission to which these applications relate.

The reasonable practicability of rail damping in route sections H and I-1

40. Under the Council's condition 2 regarding rail damping (paragraph 4 above) NR is asked to demonstrate whether it is reasonably practicable to install rail damping. The context for this decision is that:

- i. the NVMP regards noise impacts of 3dB or more to be significant and in need of mitigation;
- ii. the NSoA for route section H (table 5.2 on pages 32-34) shows that after installed mitigation there is one property with a residual (post barrier) noise impact of 3dB in which the requirement for further mitigation needs to be considered; and,
- iii. the NSoA for route section I-1 (table 5.2, pages 29-30) shows that there are no properties with residual (post barrier) noise impacts of 3dB or more.

41. Queen's Counsel has advised that the crucial elements for the decision-maker in determining the reasonable practicability of using rail damping at the single NSR in section H which is predicted to experience significant residual (post barrier) noise impact are, "*The context, the severity of the impacts and the scale of the benefits and to how many people*" (QC Advice, para 79).

42. Taking into account all the material submitted and the representations made, the officer assessment in the terms suggested by the Queen's Counsel is as set out in the table below (this is based on updated advice from the Queen's Counsel which clarified typographical errors in his original letter):

Queen's Counsel's Updated Advice	Officer assessment
The context <ul style="list-style-type: none"> The NVMP does not require 'at source' if the other measures already provided will achieve the objectives (para 77) 	<p>In current circumstances with barriers and insulation already installed, the potential role for rail damping is only to supplement that existing mitigation at NSRs experiencing significant residual (post barrier) noise impacts (3dB or more) if reasonably practicable.</p>
The severity of the impacts <ul style="list-style-type: none"> Noise impacts below 3dB are not considered to be significant (para 58) 	<p>The barriers and insulation together meet the requirements of the NVMP (in both route sections H and I-1) apart from in relation to one Noise Sensitive Receptor (NSR) in section H where the residual noise impact is 3dB.</p>
The scale of benefits <ul style="list-style-type: none"> QC assumes that rail damping may mitigate noise impacts by 2.5dB (para 4) 3dB difference is at the margin of perceptibility (para 73) The NVMP standards concern internal, not external noise levels (para 14c) 	<p>A 2.5dB difference is less than the level considered to be "significant" for residual noise impact purposes by the approved NVMP.</p> <p>Rail damping could only be relevant at the <u>one</u> NSR referred to above where the residual noise impact is 3dB.</p> <p>The approved NVMP does not require mitigation of noise to open areas or gardens.</p>
How many people will benefit <ul style="list-style-type: none"> For those who already have noise insulation, open window noise will be reduced At one house there will be noise reduction from 3db 	<p>Not relevant to this decision - the approved NVMP does not require mitigation of noise where windows are opened.</p> <p>The one NSR benefit will involve mitigation of a noise impact which is of itself at the limits of perceptibility.</p>

43. It can be concluded therefore that a reduction in residual noise which is of itself at the margins of perceptibility, occurring at only one NSR, is of such limited benefit that, given the costs indicated in the submissions for the installation of rail damping, it is not reasonably practicable to install rail damping in route sections H and I-1.

44. The recommendation is therefore that the NSoAs relating respectively to route sections H and I-1 be approved subject only to a condition specifying conformity with the documents that form part of the application and excluding the previously imposed condition regarding rail damping.

Restrictions on the pattern of train services

45. Condition 3 (reproduced in paragraph 4 above) limits train movements to the number and pattern of movements used to predict operational noise and vibration as set out in the NVMP (paragraphs 1.8 to 1.10) - the reasonable planning scenario. The reason for this condition was to limit the actual operation of services on the line to the pattern set out in the reasonable planning scenario given that any changes to services could have different and possibly unacceptable operational outcomes for noise (and vibration) which might require further mitigation.
46. At the time the condition was imposed by WAPC, officers advised that there was no legal basis for this condition because the deemed permission did not include any control over the number and pattern of services. This was notwithstanding the many representations from local people that significant increases in services and altered types of services including longer trains are in prospect. In other words that the modelled pattern of services was unlikely to be adhered to.
47. Queen's Counsel has since advised that the NVMP does not require any assessments to address any future increases in service and that such potential changes do not need to be modelled (QC Advice, para 84). Through the granting of the original permission, NR was given the right to increase services without being in breach of condition 19 of the deemed planning permission, and NR does not need to seek further permission or consent to make such changes (QC Advice, para 85).
48. It is clear therefore, that there is no legal basis for the imposition of this condition.

Conclusions:

49. The Council has taken these issues very seriously over a prolonged period and has instructed independent experts to assist it both on the technical and legal side. The overall position is that barriers have been installed and have provided substantial mitigation to most houses such that the impacts will be below the threshold of significance. For some houses, the residual impacts (after barriers) will remain high (greater than 10db) and for those noise insulation has been provided.
50. The role of rail damping and whether it is reasonably practicable has to be considered in the light of the installed barriers, and the costs of installing rail damping. One house has been identified which, after barriers has a 3db impact (the lowest relevant impact). 3db is at the limit of perceptibility, given which, that property would potentially secure a 'just-noticeable' gain from rail damping. As set out in paragraphs 40 and 41 above, it can be concluded it is not reasonably practicable to install rail damping in route sections H and I-1.
51. There is no legal basis for the local planning authority to impose a condition restricting the pattern of services using the line.

52. The recommendation is therefore that the NSoAs relating respectively to route sections H and I-1 be approved subject only to a condition specifying conformity with the documents that form part of the application and excluding the previously imposed conditions regarding rail damping and restricting the pattern of train services.

Human Rights Act 1998

Officers have considered the Human Rights Act 1998 in reaching a recommendation to grant planning permission, subject to conditions. Officers have considered the potential interference with the rights of the owners/occupiers of surrounding properties under Article 8 and/or Article 1 of the First Protocol of the Act and consider that it is proportionate.

Officers have also considered the interference with the human rights of the applicant under Article 8 and/or Article 1 of the First Protocol caused by imposing conditions. Officers consider that the conditions are necessary to protect the rights and freedoms of others and to control the use of property in accordance with the general interest. The interference is therefore justifiable and proportionate.

Section 17 of the Crime and Disorder Act 1998

Officers have considered, with due regard, the likely effect of the proposal on the need to reduce crime and disorder as part of the determination of this application, in accordance with section 17 of the Crime and Disorder Act 1998. In reaching a recommendation to grant planning permission, officers consider that the proposal will not undermine crime prevention or the promotion of community safety.

Background Papers: 16/02507/CND; 16/02509/CND

Contact Officer: Fiona Bartholomew

Extension: 2774

Date: 8th March 2017

To members of the West Area Planning Committee, for Agenda Item 3 of the meeting on 21 February, 2017.

I am sorry to give you more reading for this meeting. But I feel I must draw your attention to an important gap in the information provided to you so far. I know you will want to be fully informed for such an important planning decision, affecting literally hundreds of Oxford residents.

The Network Rail case for refusing to deploy ‘at source’ noise mitigation (the most obvious form of which would be ‘SilentTrack’ rail dampers) is based primarily on cost. The benefit-to-cost ratio (BCR) is claimed to be so low as to make their use ‘not reasonably practicable’.

I have explained to Oxford City Council that NR’s prediction of BCR is unreliable for the EWR context. The real BCR achievable with rail dampers is likely to be higher. My advice to Oxford City Council making this point is referred to in the Planning Officers’ report for Agenda Item 3 of the meeting (see pages 14, 20), but was omitted from the Public Reports pack for this meeting. Since this matter is so crucial to your deliberations, I append it for your information – see below.

After I submitted my advice, the Council invited responses from NR and Arup. NR continue to insist the range 2.5-3dB¹ is a ‘reasonable estimate’ of the noise reduction achievable from SilentTrack, but provide no justification. Arup go along with the 2.5dB figure, on the basis of one paper they admitted in an earlier ‘independent’ report to the Council (Arup report H04-OB, P.5) had been provided to them by NR, *apparently* supporting such a low figure. It is a research paper by Prof David Thompson and colleagues at the Institute of Sound and Vibration Research at Southampton University where SilentTrack was developed. Since the NR and Arup opinions became public, Prof Thompson has pointed out² that the 2.5dB figure quoted from his paper has been taken out of context. It relates to a study for a Franco-German project, where German rolling stock was simulated, running on tracks fitted with German (Schrey and Veit) rail dampers. Because the wheels of UK rolling stock are designed to radiate substantially less noise than their German equivalent, noise reduction from SilentTrack (which attenuates only noise from the track and not from the wheels) would be expected to be much higher on UK tracks. Prof Thompson estimates 4.4dB³ would have been obtained in that study for UK rolling stock. Thus the claim that SilentTrack would provide only ‘2.5-3dB’ noise reduction in the EWR context remains unsubstantiated. On the basis of UK-relevant evidence, this figure seems to me misleadingly low.

Paul Buckley
(Emeritus Professor of Engineering Science, University of Oxford)

¹ All noise levels referred to in ‘dB’ here and in the Appendix are ‘A-weighted’ noise levels, which allow for the frequency-dependence of human sensitivity to noise, as is usual in professional discussions of noise.

² Professor D.J.Thompson, private communication, January 2017.

³ This corresponds to a 70% reduction in noise power, which would be perceived by a typical person as a roughly 25% reduction in noise intensity.

Appendix

Comments for Oxford City Council on ERM document *EW R Phase 1: Sections H and I/1 Supplementary Statement responding to additional points made by OCC and consultees on whether the installation of rail damping is 'not reasonably practicable'*

To: Fiona Bartholomew

From: Paul Buckley

23 December, 2016

I understand that planning application 16/02507/CND will be considered by Oxford City Council's West Area Planning Committee (WAPC) on 24 January 2017. This seems to be a renewed application for OCC to approve the Noise Scheme of Assessments (NSoAs) for Sections H and I/1 of East West Rail Phase 1 (EWRP1), but *without* three conditions that were previously attached. One of these conditions is Condition 2: the requirement to submit proposals for rail dampening. WAPC has, of course, already considered and refused a request to remove Condition 2 at its meeting of 13 September 2016. So far as I am aware, the only new information provided to OCC since then in support of the removal of Condition 2, is this ERM 'Supplementary Statement'. Therefore it will be of crucial importance to WAPC's deliberations.

I have written previously to point out how unconvincing is the case made in the Supplementary Statement (see my comments of 9 November 2016 displayed on OCC's planning website). However, since then further evidence has come to light, revealing that ERM's Supplementary Statement is not only unconvincing: it is seriously misleading in some important respects. My reason for writing now is to alert you and your colleagues at OCC to this danger. In the following two areas in particular, it relies on claims inconsistent with known facts, leading to a flawed conclusion that SilentTrack would not be 'reasonably practicable' in the Oxford portion of EWRP1.

1. An essential plank of ERM's argument is their claim that the sound reduction benefit to be expected from SilentTrack, expressed in terms of the sound measure $L_{A,eq}$, is only 2.5-3dB, '*based on the available evidence*': e.g. see Section 1.2. This is a grossly misleading representation of the facts. Usage of SilentTrack to date has been almost entirely confined to continental Europe, giving a range of levels of noise reduction: some indeed are as low as this. But there are differences between rolling stock used in different countries. For *UK* rolling stock running on current *UK* track, such as the EWRP1 track, expert opinion is that a higher level of noise reduction can reasonably be expected: 5dB⁴ or 6dB⁵. These opinions are based on the limited available UK evidence, which has shown 5dB⁶ or 6dB⁷ being achieved in practice.

⁴ Professor D.J.Thompson, private communication, December 2016.

Please note that the list of authors of this UK evidence^{3,4,5,6} includes names already well known to OCC: *all* the main sources of advice received by OCC concerning compliance of the EWR scheme with Condition 19 are there - Chris Jones, Brian Hemsworth, and Oliver Bewes of Arup.

2. A key assumption made by ERM is that noise levels calculated using SoundPlan software, and presented in the NSoAs, are reliable predictions of future noise levels when EWRP2 is in operation. We now know there are at least two reasons for doubt.

Firstly, the input data used by ERM in SoundPlan are based on noise levels from various types of rolling stock given in the 1995 Department of Transport document *Calculation of Railway Noise*, modified where necessary to accommodate some more recent types - see Appendix D of the Noise Scheme of Assessment (NSoA). Thus the data relate to rolling stock running on UK railway tracks of 1995 and earlier. It might be expected that these data would provide a cautious prediction for new tracks, because newly laid track will be smoother and therefore generate less noise. However, in an important study published recently, this was shown **not** to be the case. When old UK track was replaced by new UK track, noise levels generated by trains were found to *increase* substantially: by 4dB⁸. The explanation for this is that new UK track (including the EWRP1 track) is supported on pads that are much softer compared to those used in the 1990s. The noise-amplifying effect of lower pad stiffness is found to outweigh considerably the difference in track smoothness. The SoundPlan predictions produced by ERM neglect this, and will therefore be seriously in error; most likely under-predicting noise levels by 4dB.

Secondly, there is inevitable uncertainty in results of the computations carried out within SoundPlan, as in any numerical modelling of complex physical processes. An estimate of the degree of uncertainty in this case can be obtained simply by comparing predictions made with two different versions of SoundPlan itself, using the same input data. The two versions of the NSoA produced by ERM for Section H of EWRP1 allow this comparison to be made: the December 2014 (original) version and the March 2015 (revised) version, which used different versions of SoundPlan (versions 7.1 and 7.3 respectively). Noise contours shown in the two versions of the NSoA are clearly not identical: they deviate by a few dB in many locations. Considering the predictions of $L_{A,max}$ for the 26 properties listed, the mean difference in values of predicted $L_{A,max}$ between the original and revised versions is 2dB – the revised values always being lower than the original.

⁵ B.Hemsworth, *Noise reduction at source: EU Funded Projects*, European Workshop on Railway noise in urban areas: Possible noise reduction measures, Pisa, November 2006.

⁶ O.Bewes *Assessment of the benefit of rail dampers installed in Blackfriars Station: a Technical Note* for Arup, May 2014.

⁷ D.J.Thompson, C.J.C.Jones, T.P.Waters, D.Farrington *A tuned damper device for reducing noise from railway track*, Applied Acoustics **68** (2007) 43-57.

⁸ M.Toward, G.Squicciarini, D.Thompson, *Damping down noise* Rail Professional, February 2014, pp 83-85.

Consequently, combining both the known error and the uncertainty, SoundPlan predictions of future noise levels given in the final NSoAs for the different sections of EWRP1 can reasonably be expected to be *too low* by at least 4dB, and may be too low by 6dB.

Consequences

These errors in ERM's submission are critical. The primary argument given in the Supplementary Statement for SilentTrack being 'not reasonably practicable' is the cost relative to benefits: expressed as the Benefit-to-Cost ratio (BCR). ERM employ the 'WebTAG' method to monetise the predicted benefit from using SilentTrack. The combination of both errors – *under*-prediction of noise reduction provided by SilentTrack and *under*-prediction of prevailing noise levels in the absence of Silent Track – cause the monetised value of the benefit to be under-predicted by WebTAG, by a substantial margin. This causes all BCR values presented by ERM to be substantially under-predicted: they should not be trusted.

Another argument given in the Supplementary Statement is that some track-side houses have been provided with noise insulation, where they should not have been if SilentTrack were used, since their noise exposure would be reduced below the threshold justifying provision of noise insulation. However, this argument is false. ERM's error in the predicted noise level without SilentTrack (say 4-6dB) is approximately balanced by ERM's error in the predicted benefit from SilentTrack (say 5dB), so that if correct numbers were used, the predicted final noise level *with* SilentTrack would be close to those currently predicted *without* SilentTrack: i.e. the two errors approximately cancel when predicting residual noise levels. Hence there is unlikely to be any significant effect on the selection of properties qualifying for noise insulation.

In conclusion, the Supplementary Statement from ERM is deeply flawed in several important respects. It would not be a credible basis on which to remove the condition requiring deployment of SilentTrack or similar rail dampers.

Subject Comment on Professor Buckley's letter of 21 February 2017

Date 6 March 2017

Job No/Ref H07-OB

The following notes are in response to Prof. Buckley's document titled "*To members of the West Area Planning Committee, for Agenda Item 3 of the meeting on 21 February, 2017*". In the document Prof. Buckley questions the evidence surrounding the assumption that 2.5-3dB is a reasonable estimate of the noise reduction that will be achieved with SilentTrack. Prof. Buckley points out that the evidence used to support the assumption¹ was for a Franco-German project called STARDAMP and claims that Prof. David Thompson has advised him that, while not discussed in the paper, the study assumed parameters for train wheels that are more applicable for German trains than UK trains. He says that Prof. Thompson estimates that if UK wheels had been simulated a noise reduction of 4.4dB would have been obtained.

This finding highlights that the performance of rail damping products are highly sensitive to the context in which they are installed. The performance of a rail damper is dependent not only on the damping product but on the type of track and rolling stock as well as their condition. In our note H04-OB we advised that the performance presented in [1] was a reasonable estimate of performance for use in the context of a WebTAG analysis on the basis that the design parameters of the track were appropriate for the type of track to be installed on the East West Rail Scheme. At no point have Arup been asked to provide our own estimate estimate of rail damper performance for EWR, we have only been asked to comment on NRs evidence. In H04-OB we also noted that further prediction work, undertaken according to the methodology defined in [1], would be required to provide the best estimate of the performance of SilentTrack on EWR. The information provided by Prof. Thompson's 2013 paper is helpful even though it is given for a different damping product to SilentTrack and for a single type of rolling stock.

Taking the new information provided by Prof. Buckley on behalf of Prof. Thompson at face value, we have no grounds to dispute that this opinion is a better estimate of the performance of rail dampers for some of the rolling stock using EWR. However the operational situation on EWR is more complex because a combination of different types of rolling stock, freight stock and freight locomotives use the railway. The information provided by Prof. Buckley does not address this complexity and therefore will not necessarily translate to EWR.

As already stated, the best estimate of the performance of rail dampers would require further testing and prediction work to be undertaken according to the methodology described in [1]. This would involve laboratory testing of the SilentTrack damper on short sections of track together with noise predictions for the damper using TWINS² (or similar) which consider all types of rolling stock using EWR. This would provide an estimate of the rolling stock specific noise reduction that could be achieved with SilentTrack. Alternatively rail roughness, rail decay rate and noise measurements on the operational EWR combined with TWINS modelling could be used to estimate the rolling stock specific performance of SilentTrack. To assess the benefit at noise sensitive receptors using WebTAG, the noise modelling undertaken by ERM would then need to be corrected to account for the rolling stock specific rail damper performance. Without undertaking this work it is not possible to say whether it would affect the conclusions of the assessments to date.

¹ M. G. R. Toward et al. Estimating the performance of rail dampers using laboratory methods and software predictions. Proceedings of the 11th International Workshop on Railway Noise, 9-13 September 2013 at Uddevalla in Sweden

² Thompson, D.J. et al.: Experimental Validation of the TWINS prediction programme for rolling noise, PART 1: Description of the model and method, Journal of Sound and Vibration. 193: 123-35 (1996)

Subject Comment on Professor Buckley's letter of 21 February 2017

Date 6 March 2017

Job No/Ref H07-OB

In summary, the information provided by Prof. Buckley highlights that estimating the actual performance of rail dampers on EWR is complex because a combination of different types of rolling stock, freight stock and freight locomotives use the railway. Further technical work that considers these complexities would be required to provide the best estimate of rail damper performance on EWR. Without undertaking this work, the alternative performance estimate provided by Prof. Buckley should be taken into account as a potential outcome for the performance of rail dampers on EWR, albeit for a different damping product to SilentTrack and for a single type of rolling stock.

**Planning Review Committee 15 March 2017 – applications Network Rail
16/02507/CND and 16/02509/CND**

Monitoring Officer's Note to accompany the report of the planning officer

Rail damping

The decisions before members relate to approvals required under planning conditions imposed by the Secretary of State (SoS). There is nothing unusual about the SoS granting permission subject to a requirement for further approvals. What is unusual is the subject matter of these approvals.

The condition (19) imposed by the SoS required the submission of schemes of noise and vibration attenuation together with independent experts' reports as to their robustness. The requirement for robustness reports was a response to criticisms as to the expertise of local planning authorities to address operational railway noise raised at the public inquiry that led to the SoS granting planning permission. The Council has gone further than this and has sought its own expert opinion from Arup and the opinion of Queen's Counsel.

The Opinion of Queen's Counsel has been published and included as part of the Committee papers. Its core reasoning is set out in the Officer's Report to which it is appended so that is not repeated. Attention is however drawn to the statement that "...NR's approach to the application of the NVMP is permissible (and I think correct) On that approach, the potential role of [rail damping] for section H is very limited." (para 78).

There are two distinct categories of issues with these applications:

The first goes to the scope of the decisions before the Council. These include issues such as the claimed ability of the Council to rewrite condition 19, the consideration of effects other than those at "noise sensitive receptors" and, in broad, terms, the achievement of what the Council might see as a satisfactory noise/vibration environment. The Council has no power to do this. It cannot look behind C.19 as drafted by the SoS.

Thus the consideration of effects other than those at "noise sensitive receptors" would be the taking into account of a matter not relevant to the condition. Similarly the achievement of a particular noise environment is not what the condition requires i.e. the Council cannot impose its own standards of noise or vibration control..

The condition requires that, "The submitted schemes of assessment shall show how the standards of noise mitigation set out in the Policy will be achieved..." (c19.6). The SoS when granting that planning permission determined that achieving those

standards was acceptable. This Council cannot revisit those standards regardless of what view it might have as to whether those standards are now acceptable or were ever acceptable.

This first category of issues do not go to the planning merits but to what it material to the determination of the applications. As members will be aware, immaterial considerations must be disregarded. It is unlawful to do otherwise.

The second category of issues relate to that “very limited” “potential role” for rail damping within the scope of c19 and the NVMP. Queen’s Counsel has advised that is to be informed by but not dictated to by the WEBTAG assessment.

The advice from officers and Arup on this is clear, particularly once one discounts those matters which are legally irrelevant. Matters of planning judgement are matters for the Council unlawfulness arising only where a decision takes account of an immaterial consideration, fails to take account of a material consideration or is so unreasonable that no reasonable local planning authority could have reached that decision. An example of an unreasonable decision in this context is an arbitrary decision; one that cannot be supported by relevant reasoning/evidence. On the material seen it is at least arguable that decisions to maintain rail damping would be unreasonable in this sense.

An unlawful refusal of approval could result in a potential challenge via judicial review. That prospect is however extremely unlikely (and unusual) as the statutory right of appeal to the Secretary of State would almost always be a more appropriate and preferred basis for challenge.

If appeals were lodged it would seem likely that a local public inquiry would be arranged. This is because of the level of public interest (and participation) and the issues being raised. (N.B. The scope of the decisions at appeal would be no different to those before the Council. The SoS (or Inspector) would not be considering issues beyond the scope of condition 19 and the NVMP.) The expected length of an public inquiry is a matter of conjecture but, for the same reasons, it would be prudent to anticipate at least a second week and perhaps longer. WAPC was advised that the current team (officers and consultants) would not be able to present a case in support of the Council in such an appeal so external representation would be required.

It will be clear from the officer’s report that officers advice is that such an appeal would be lost.

The Council will have to bear its own costs. It will only have to bear the costs of NR if a costs award was made by the SoS (or Inspector). Costs awards are only made where “unreasonable behaviour” had led to additional costs being incurred. In cases where an appeal would otherwise not have been necessary the entirety of the appeal costs would be such additional costs.

Unreasonable behaviour does not bear the meaning described above. It bears its common English meaning albeit the SoS has provided examples in the planning practice guidance. One example is failure to produce evidence to substantiate each reason for refusal on appeal. Another is vague, generalised or inaccurate assertions about a proposal's impact, which are unsupported by any objective analysis.

Another is persisting in objections to a scheme or elements of a scheme which the SoS or an Inspector has previously indicated to be acceptable. Yet others concern refusing to approve matters that properly relate to outline matters (i.e. the SoS permission of 2012) and, imposing conditions that do not accord with national policy.

As matters currently stand, there appears to be no cogent response to any of those.

As such it has to be advised that the expected consequences of refusals would be allowed appeals with the Council bearing the costs of both itself and NR.

Restriction on Train Numbers

The issues here are clear. As Queen's Counsel notes noise mitigation is to be designed based on the train numbers and timing assumptions (NVMP paras 1.8 to 1.10) (para 80). It is made clear that future train growth need not be taken into account (para 84) and that "Given that no condition was imposed on the Permission [2012 deemed permission granted by SoS], NR could increase the number of trains on the line without being in breach of any condition." (para 85).

This is quintessentially an example of something that the SoS could have done at that stage but did not do. For the reasons given above in connection with rail damping it is equally clearly not a condition that can be imposed on condition 19 approvals; it is addressing what is perceived as an omission on the part of the SoS which is plainly not within the scope of a condition 19 approval.

The likely consequences of refusing to approve condition 19 schemes without this condition are similar to the likely consequences to requiring rail damping albeit with more certainty as this issue is one of pure legality and involves no planning judgement.

6 March 2017

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