

Application Numbers: 16/01634/CND: Noise Scheme of Assessment for route section I-2

16/01635/CND: Vibration Scheme of Assessment for route section I-2

Decision Due by: 17th August 2016

Proposals: Details submitted in compliance with condition 1 (Noise and Vibration - route section I/2) of TWA ref: TWA/10/APP/01 (The Chilterns 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 **Appendix 1**

Ward: North, and Jericho and Osney Wards

Agent: ERM

Applicant: Network Rail

Recommendation

West Area Planning Committee is recommended to approve these applications for the following reasons:

Reasons for approval – Noise Scheme of Assessment - 16/01634/CND

- 1 The submitted Noise Scheme of Assessment is considered to be robust. It predicts that the operational noise from EWRP1 will cause increases of 3dB or more at a number of properties in route section I-2; but predicts no increases of 5dB or more at any properties in route section I-2. No noise mitigation is proposed. Taking into account the representations made by all parties, the adopted policies of the Oxford Local Plan 2001-2016 which seek to preserve residential amenity where properties are close to noise generating development, and the requirements of condition 19 of deemed planning permission TWA/10/APP/01, it is recommended that the application be approved subject to conditions requiring development in accordance with submitted details, and the submission of proposals for the installation of rail damping.
- 2 Officers have considered carefully all objections to these proposals. Officers have come to the view, for the detailed reasons set out in the officers report, that the objections do not amount, individually or cumulatively, to a reason for refusal and that all the issues that have been raised have been adequately addressed and the relevant bodies consulted.

Conditions:

- 1 Development in accordance with application documents
- 2 Implementation of rail damping

Reasons for approval – Vibration Scheme of Assessment – 16/01635/CND

- 1 The submitted Vibration Scheme of Assessment is considered to be robust and has demonstrated that the required standards of vibration mitigation set out in the Noise and Vibration Mitigation Policy will be achieved. Taking into account the representations made by all parties, the adopted policies of the Oxford Local Plan 2001-2016 which seek to preserve residential amenity where properties are close to vibration-generating development, and the requirements of condition 19 of deemed planning permission TWA/10/APP/01, it is recommended that the application be approved subject to a condition requiring development in accordance with submitted details.
- 2 Officers have considered carefully all objections to these proposals. Officers have come to the view, for the detailed reasons set out in the officers report, that the objections do not amount, individually or cumulatively, to a reason for refusal and that all the issues that have been raised have been adequately addressed and the relevant bodies consulted.

Condition:

- 1 Development in accordance with application documents

Note about additional conditions previously imposed by the Committee

The Committee will recall that when approving the NSoAs and VSoAs for route sections H and I1, conditions were applied restricting (i) train movements in accordance with condition 19 of deemed permission, and (ii) requesting continuous monitoring. The conditions read (as relevant):

- *“Passenger train movements on Section H/I1 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)”

- *“Section H/I1 shall not be made available for use by trains until provision for continuous monitoring of noise/vibration for noise/vibration sensitive properties throughout section H/I1 has been affected in accordance with a scheme previously approved in writing by the Council. The results of such monitoring shall be provided to the Council on each of six months, eighteen months, thirty months, forty-two months, fifty-four months, sixty-six months*

and seventy-eight months from the date on which Section H/11 is first made available for use for trains. In the event that the monitoring results provided to the Council exceed the noise/vibration thresholds in the Noise and Vibration Mitigation Policy then additional mitigation measures shall be affected within six months in order to ensure that those levels are not again exceeded.

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

The Committee was advised by officers at the time that in their opinion these conditions would not meet the legal or policy tests of the NPPF. Officers remain of that view and are not recommending their re-imposition.

Main Local Plan Policies

Oxford Local Plan 2001-2016

CP6 - Efficient Use of Land & Density

CP10 - Siting Development to Meet Functional Needs

CP19 - Nuisance

CP21 - Noise

Core Strategy

CS13 - Supporting access to new development

CS27 - Sustainable economy

Other Main Material Considerations

- National Planning Policy Framework
- National Planning Policy Guidance
- Environmental Information
- The deemed planning permission of 23 October 2012 and documents related to it including the Noise and Vibration Mitigation Policy (January 2011)

Relevant Site History

13/00918/CND - Details submitted in compliance with condition 3 (development sections) 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).. PER 7th May 2013.

15/01978/CND - Details submitted in compliance with condition 3 (Individual Section schemes) 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).. PER 5th November 2015.

Representations Received:

Representations have been received from 17 addresses including Merrivale Square, Rutherway, Plater Drive, The Crescent, Woodstock Road. 3 representations had no residential address given. The Rewley Park Management Company also commented.

The main points raised were:

- NR is going back on its promise to lay new track - new track is essential for this part of the line;
- properties in this area suffer considerable noise and vibration from trains;
- this area needs noise and vibration mitigation given the large and increasing amount of rail traffic;
- need speed limits on trains;
- support the rail improvements but must be sensitive to the needs of nearby residents;
- the condition was imposed because mitigation is needed – nothing has changed to lessen those needs;
- NR gets planning permission and then changes the planning conditions.

The Purpose of this Report

1. The purpose of this report is to consider and recommend on the acceptability of the Noise Scheme of Assessment (NSoA) and Vibration Scheme of assessment (VSoA) for route section I-2, submitted by NR in accordance with condition 1 of planning reference 15/01978/CND. The report was deferred from the West Area Planning Committee meeting on 13th September for further information and analysis.
2. The report examines:
 - the background to the application
 - the requirements of condition 19 in relation to noise and vibration including reference to **Appendix 4** which sets out the technical background including:
 - why noise and vibration are considered separately;
 - the requirements of the NVMP in relation to noise;
 - what is an NSoA and how is it judged?;
 - the requirements of the NVMP in relation to vibration;
 - what is a VSoA and how is it judged?; and,
 - the requirements of the NVMP in relation to monitoring;
 - the details of the NSoA and VSoA submitted for route section I-2 including any mitigation proposed and responses to representations received; and,
 - recommends as to the acceptability of the conclusions drawn.

Background

The deemed planning consent for EWRP1

3. The Transport and Works Act Order (TWAO) and deemed planning permission for East West Rail Phase 1 (EWRP1) (“the scheme”) was granted, subject to conditions, on 17th October 2012.
4. *Sustainability*: in granting deemed planning permission for the scheme, the Secretary of State concluded that there is a compelling case to increase rail capacity between Oxford and London, and that the scheme would bring substantial transport benefits in terms of reduced travel times, better public transport connectivity, and better rail network capability. In the decision, the Secretary of State weighed these sustainability benefits against the potential adverse impacts that the scheme might cause. Those considerations gave rise to several of the planning conditions dealing with the natural environment and residential amenity.
5. The original permission was described in terms of Phases 1, 2A and 2B – these phases are all now encompassed in the term East West Rail Phase 1 (EWRP1). The scheme involves:
 - i. replacing the existing Bicester/Oxford track for its length within the city up to a point opposite Stone Meadow where it deviates west of the existing line and joins the main line near the existing Aristotle Lane crossing;
 - ii. constructing a new line to the west of the existing line which also joins the main line opposite Stone Meadow; and,
 - iii. works in the Wolvercote tunnel.
6. Some proposals which were in the original permission are not now being implemented, namely:
 - a new track from opposite Stone Meadow into the Oxford Station close to the eastern side of the exiting extent of railway land;
 - a new short spur from that track into the station (together with a new platform) which commenced just north of the Rewley Road Swing Bridge; and,
 - a shorter link which was to have joined the new line (ii above) to the main line in the vicinity of Stone Meadow.

Agreement of the route sections

7. Condition 3 of the deemed permission required proposals to be approved to divide the scheme into individual development sections. Network Rail’s (NR) proposals for route sections within Oxford were approved under delegated

powers on 7th May 2013 (reference 13/00918/CND). Under those proposals route sections H, I and J are located in Oxford and route sections A to G are in Cherwell District.

Splitting route section I into I-1 and I-2

8. The revised proposals for EWRP1, omitting certain elements as described in paragraphs 4-7 above, meant that the remaining track replacement work being undertaken at the southern part of route section I and in route section J (from Aristotle Lane Footbridge southwards to just north of Oxford Station) no longer formed part of the works to be implemented under the TWAO. NR is relying permitted development rights to implement these works. The effect of this was that the conditions attached to the TWAO and deemed planning permission would no longer apply to the line south of Aristotle Lane Footbridge and on into Oxford Station.
9. In order to facilitate this change to the scheme, NR was obliged to split route section I into two parts (planning application reference 15/01978/CND):
 - I-1 (north of Aristotle Lane Footbridge where the TWAO and planning conditions still applied); and,
 - I-2 (south of Aristotle Lane Footbridge to the point where it abuts route section J, where the TWAO and planning conditions no longer applied).
10. On 5th May 2015 WAPC agreed to splitting route section I into those two sections subject to a condition that a Noise Scheme of Assessment (NSoA) and Vibration Scheme of Assessment (VSoA) and associated proposals for monitoring and mitigation of the operational noise and vibration of the passenger and freight services on the rail line be submitted and approved for route section I-2. This was effectively re-imposing condition 19 of the deemed permission for EWRP1 which had been imposed in order to “ensure that operational noise and vibration are adequately mitigated at residential and other noise sensitive premises” (Appendix 2).
11. The condition imposed on 15/01978/CND by WAPC reads:

“The development facilitating the passage of EWRP1 trains in Section I/2 shall not be used for the passage of passenger rail traffic until Noise and Vibration Schemes of Assessment (SoAs) for Section I/2 have been submitted which accord with the requirements of condition 19 of deemed planning permission TWA/10/APP/01 and approved in writing by the local planning authority AND all noise and vibration mitigation required under the approved SoAs for section I/2 has been installed. So far as not inconsistent with this condition, the requirements of condition 19 of deemed planning permission TWA/10/APP/01 shall apply to the development facilitating the passage of EWRP1 trains in Section I/2 as if that development was “Development” as defined in deemed planning permission TWA/10/APP/01.

Reason: To ensure that operational noise and vibration are adequately mitigated at residential and other noise sensitive premises”.

The Requirements of Condition 19 - noise and vibration

12. Condition 19 is entitled “Operational noise and vibration monitoring and mitigation” and is a relatively complex condition with a number of components. Its core requirements are that:

- operational noise and vibration monitoring and mitigation are to be carried out in accordance with the Noise and Vibration Mitigation Policy, **Appendix 3**, which was approved by the Secretary of State; and,
- development within each section of the scheme is not to commence until noise and vibration schemes of assessment have been approved by the Council.

13. Schemes of Assessment are to be submitted to show how the standards set out in the Noise and Vibration Mitigation Policy (the Policy) will be achieved. The Schemes of Assessment are to be accompanied by a report prepared by an Independent Expert (who has been approved in advance by the Council) commenting on their robustness. The appointment of the Independent Experts: one for noise (Brian Hemsworth) and one for vibration (Dr. Chris Jones), were agreed by Oxford City Council on 2nd May 2013 under delegated powers and planning application reference 13/00907/CND. The detailed Technical Background to the Schemes of Assessment and their evaluation is contained in **Appendix 4**.

The Submitted Schemes of Assessment in this case

The NSoA for Route Section I-2

14. The submitted NSoA for route section I-2 was accompanied by a report by the IE for noise and therefore meets the ‘content’ tests set out in **paragraph 26 above**. The IE’s report comments on the methodology used, the results obtained and the NSoA outcomes and concludes that the noise predictions are accurate.

15. In route section I-2 the existing noise levels are high due to the operation of trains on the mainline adjacent to the proposed new line.

16. The NSoA predicts that the operational noise from EWRP1 will cause increases of 3dB or more at a number of properties in route section I-2. Under the NVMP, increases of 3dB or more are to be mitigated by ‘at source’ measures which may include rail damping (see paragraph 11 of Appendix 4). NR is not proposing the installation of rail damping because it has not obtained ‘type- approval’ for the use of rail damping on this type of line.

17. The NSoA predicts that the operational noise from EWRP1 will not cause increases of 5dB or more at any properties. The NVMP requires increases of 5dB or more to be mitigated by the installation of noise barriers (paragraph 11 of Appendix 4). NR is not proposing barriers because there are no increases

of 5dB or more in route section I-2

18. NR's case therefore is that no noise mitigation is required in route section I-2 because rail damping is not type-approved and the noise increase values which determine whether mitigation is required (paragraph 11 of Appendix 4) are not exceeded by operational noise from EWRP1 at any noise sensitive receptors.

Comments made by Network Rail at WAPC on 13th September 2016

19. At the meeting of the West Area Planning Committee on 13th September, officers recommended that the application be approved subject to a condition that rail damping to at least the standard of SilentTrack is implemented unless it can be established that it would not be reasonably practicable to do so. This would be consistent with recommendations in respect of the NSoAs for route sections H and I-1. In their presentation to the Committee on 13th September, NR made comments on that recommendation which are discussed below.

- NR comment – *“this last minute change is highly unusual and contradicts the recommendations of the Council's Independent Expert”*.
- Officer response:

20. For clarification, the IE's role, as required by condition 19 of the deemed permission for EWRP1, is *“to comment on the robustness of the noise-related elements of the scheme of assessment”*. In so doing, the IE is not acting on behalf of the Council, or of any other party. Although the IE role is a requirement of condition 19, it had been agreed by the applicant that the Noise Scheme of Assessment for I-2 would be submitted and checked in the same way as if condition 19 applied.

21. In fulfilling his role regarding Section I-2, and in common with previous NSoAs for Sections H and I-1, the IE focussed on the calculations and related predictions within the NSoA. He concluded that: *“In my opinion the noise predictions contained in this Noise Scheme of Assessment have been carried out using relevant noise prediction models and are accurate.”* Officers concur with this conclusion.

22. With regard to mitigation, in common with previous NSoAs for Sections H and I-1, the applicant discounted the use of rail dampers for at-source noise mitigation because rail dampers are not 'type approved' for use on the UK railway network on the relatively high speed sections of track considered in this assessment. In line with his reports for the NSoAs for route sections H and I-1, the IE did not disagree with this statement. He therefore went on to say in his report that *“I concur with the conclusions that no mitigation of operational noise is required in this Section to achieve the Noise Impact Threshold Levels defined in the Noise and Vibration Mitigation Policy”*.

23. Officers consider that the lack of type approval as described above does not mean that rail damping is not reasonably practicable. This view was upheld by

the WAPC decision on 13th September in respect of NR's rail damping applications for route sections H and I-1. It follows that any decision made by WAPC in respect of Section I-2 should be consistent with those for Sections H and I-1 and therefore officers are recommending imposition of the condition relating to SilentTrack.

- NR comment – *the presentation is an over-simplification of a complicated situation. Baseline levels at night in I-2 are much higher than the NVMP thresholds of 45dB.*
- Officer response:

24. Given the need to present essential points clearly, officers agree that matters have been simplified in the report and presentation but assert that none of this is at odds with the complications of the situation in route section I-2. Moreover, the presence of baseline levels which exceed the NVMP night time Noise Impact Threshold does not remove the requirement for mitigation measures to be considered. NR has confirmed that there are several properties where the scheme impact is between 3 and 5dB: in those circumstances para 2.4 of the NVMP requires that: *“mitigation at source through rail infrastructure solutions will be implemented where reasonably practicable”*.

- NR comment – rail damping would have only a limited effect::

“The results in Table 5.1 of the NSoA show some properties where the predicted impact is generally 3 dB or less with two locations showing an impact of 4dB. Our estimation is that the overall noise reduction from Silent Track would only reduce noise levels to between 1 and 2 dB which is generally accepted as being less than can be perceived by the human ear. The reasons why, we estimate, SilentTrack would not provide the 3-4dB stated above are as follows:

(i) Firstly all trains will be accelerating away from Oxford Station or braking towards it, therefore engine traction and braking noise will be the dominant noise sources. Neither of these noise sources will be mitigated by SilentTrack.

(ii) Secondly SilentTrack cannot be used at crossing points which are common in Section I-2.

(iii) Finally, there are no works being carried out under the TWA Order here, therefore, OCC shouldn't impose conditions on tracks not covered by the TWA.

These factors mean that, the benefits of installing SilentTrack in Section I-2 would be extremely limited”.

- Officer response:

25. Officers are not in a position either to agree or disagree with these points about the reasonable practicability of rail damping in route section I-2 because the detailed case in that respect is not part of this application.
26. NR's assertion that the work being undertaken in route section I-2 is permitted development and not part of the works approved under the Transport and Works Act does not prevent the imposition of conditions to the decision in this case. This application is for discharge of a condition relating to the splitting of route section I, not for discharge of a condition relating to works.

The VSoA for Route Section I-2

27. The VSoA for route section I-2 comprises the re-submission of the relevant parts of the approved VSoAs for route-sections H and I-1, including the report of the Independent Expert and the approved methodology. A Technical Note has also been submitted as part of the VSOA for route section I-2, dealing with properties within route section I-2 that are less than 15 metres from the tracks: it confirms that those properties would not be exposed to vibration exceeding the VDV levels set out in the NVMP. NR concludes that because there are no exceedances, no vibration mitigation measures are required.

The Determining Issues

28. The determining issues are:

- whether the submitted NSoA and VSoA for route section I-2 are robust; and,
- whether they have demonstrated that the required standards of noise mitigation set out in the NVMP will be achieved subject to the installation of any specified mitigation measures.

29. Local residents have expressed concerns that *"this area needs noise and vibration mitigation given the large and increasing amount of rail traffic"*. While there is much anecdotal evidence of operational rail noise and vibration experienced locally, this derives from the existing location of tracks and pattern of train movements. EWRP1 is only required to mitigate the noise and vibration impacts that this particular project will create. EWRP1 is not obliged to address current noise and vibration issues not related to its operations.

Conclusion in respect to the NSoA for route-section I-2

30. The NSoA for route section I-2 has been shown to be robust. It predicts:

- that the operational noise from EWRP1 will cause increases of 3dB or more at a number of properties in route section I-2: the NVMP requires these impacts to be mitigated through at source measures such as rail damping but no such mitigation is proposed; and,
- that the operational noise from EWRP1 will not cause increases of 5dB

or more at any properties and in accordance with the NVMP no noise mitigation is proposed.

31. Taking into account the representations made by all parties, the adopted policies of the Oxford Local Plan 2001-2016 which seek to preserve residential amenity where properties are close to noise generating development, and the requirements of condition 19 of deemed planning permission TWA/10/APP/01, it is recommended that the application be approved subject to conditions including one requiring the submission of proposals for the installation of rail damping which reads:

“Within three months of this approval, 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 SilentTrack 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 damping is not reasonably practicable.

Reason: in accordance with Policies CP6, CP10, CP19 and CP21 of the adopted Oxford Local Plan 2001-2016, and with the requirements of condition 19 of deemed planning permission TWA/10/APP/01, the local planning authority is not satisfied that rail damping as an at source mitigation measure has been shown to be not reasonably practicable in the absence of any attempt on the part of the applicant to secure approval for the use of such a measure.”

Conclusion in respect to the VSoA for route-section I-2

32. The VSoA for route section I-2 has been shown to be robust. It has been demonstrated that the required standards set out in the Noise and Vibration Mitigation Policy will be achieved in route section I-2. Accordingly, it is recommended that the application be approved.

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: 15/01978/CND; 16/01634/CND; 16/01635/CND

Contact Officer: Fiona Bartholomew

Extension: 2774

Date: 22nd September 2016

TECHNICAL BACKGROUND TO THE SCHEMES OF ASSESSMENT AND THEIR EVALUATION

Noise and vibration being considered separately

1. Condition 19 requirements apply both to operational noise and vibration aspects of the scheme. There are similarities and links between these two aspects, since both are generated by the same rolling stock; and a person's perception of railway noise might be affected by structure-borne vibration and vice versa¹.
2. However, the way in which sound and ground-borne vibration are generated, transmitted and perceived are different, as are the resulting methodologies for their measurement and prediction. These differences are reflected in the way that noise and vibration has been treated in the environmental impact assessment, application, public inquiry and resulting deemed permission. In effect condition 19 requires noise and vibration to be treated separately, though in the same context and using similar processes.

The Noise and Vibration Mitigation Policy – in relation to noise

3. The purpose of the Noise and Vibration Mitigation Policy (set out in part (v) of the summary on page 1) is to ensure that:

“(i) Noise will be reduced at source where it is reasonably practicable to do so.

“(ii) Where this is not reasonably practicable, noise barriers or noise insulation to properties will be provided, where necessary, in accordance with relevant standards.

“(iii) Where predicted noise levels exceed relevant levels set out in the Noise Insulation (Railways and Other Guided Systems) Regulations, noise insulation will be offered to the occupiers of eligible buildings to the standards required by those Regulations and provided at their request.

“(iv) At other locations, where statutory noise levels are not exceeded but where significant noise impacts are predicted, noise will be mitigated wherever reasonably practicable. Significant noise impacts include a significant increase in noise in an already noisy area, or the significant exceedence of stringent thresholds in an area where the ambient noise is currently low. Chiltern Railways

¹ British Standard BS6472-1:2008 “guide to evaluation of human exposure to vibration in buildings” includes advice on this interaction.

has chosen to offer this high standard of mitigation. It is not a statutory requirement”.

4. **Condition 19(2)** requires the submission of Noise Schemes of Assessment (NSoAs) and Vibration Schemes of Assessment (VSoAs) and associated proposals for monitoring and mitigation of the operational noise and vibration of the passenger and freight services on the rail line. The NVMP sets out the ‘reasonable planning scenario’: the assumptions that are to be used in the Schemes of Assessment for the numbers and timing of train movements which are as follows (set out in full for ease of reference):

“1.8 The assessment of noise and vibration has been based on two operational patterns of new train services:

- After the implementation of the works in Phases 1 and 2A, operational services will consist of up to two Chiltern Railways passenger trains per hour each way. The passenger trains will replace the existing passenger service operated by First Great Western between Bicester Town and Oxford stations.*
- After the implementation of the East West Rail (EWR) link including works in Phase 2B, there are likely to be an additional two passenger trains per hour each way.*

Neither Chiltern Railways or EWR will be running passenger trains throughout the night, and services in late evening and early morning will be at a reduced frequency. A small number of passenger trains may arrive in Oxford after midnight or depart from Oxford before 0600.

1.9. In the operation of Phase 1 and 2A, there are likely to be no more freight trains than operate at present, as there will be no new freight destinations that can be served. When the East-West Rail (EWR) link is in operation, there may be more freight trains. For this reason, additional freight services were included in the noise assessment in the Environmental Statement, so that this reflects a reasonable planning scenario. The actual number of freight services will reflect national freight demand, but will be limited to the maximum number of available freight ‘paths’ (1 per hour in each direction). Experience shows that about half of the available freight train paths are likely to be used on a given day, which would suggest a reasonable planning scenario of 8 freight train movements between 11pm and 7am. Freight trains will not use the ‘new’ railway line between Oxford North Junction (where the Bicester to Oxford Line meets the Oxford-Banbury main line) and Oxford, but instead will use the existing main line, as at present.

1.10 The noise and vibration mitigation will be designed based on the assumptions in paragraph 1.8 and 1.9 regarding the numbers and timing of train movements.” [Underlining added]

5. In the NVMP, noise sensitive receptors are defined as primarily residential properties. The NVMP does not require mitigation of operational rail noise in gardens or other open spaces.

6. The NVMP uses both predicted total noise, and predicted noise change to determine whether noise mitigation is needed and the type of mitigation to be installed. While not strictly a sequential process, it is simplified as such for easy understanding in the paragraphs below.
7. Firstly, the NVMP lays down noise thresholds to determine whether noise mitigation is needed at noise sensitive receptors:

Noise Threshold Levels	Day (0700-2300 hrs) 55dB LAeq	Night (2300-0700 hrs) 45dB LAeq	Adopted in NVMP as levels below which noise impacts are not considered to be significant
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8. Secondly, noise insulation commitments are made where noise levels at noise sensitive receptors are still high even after the installation of at source mitigation measures and noise barriers:

Noise Insulation Trigger Levels	Day (0600-0000 hrs) > LAeq (66dB) <i>where the predicted noise level is 1dB above the ambient level</i>	Night (0000-0600 hrs) > LAeq (61dB) <i>where the predicted noise level is 1dB above the ambient level</i>	These are the statutory trigger levels which would apply under the Noise Insulation Regulations.
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9. Thirdly where noise levels at noise sensitive receptors do not exceed the Noise Insulation Trigger Levels but are more than 10dB above pre-existing levels, non-statutory noise insulation is offered.
10. Finally, the NVMP makes a further commitment to noise insulation where instantaneous peak noise from a train pass-by at night exceeds 82 dB LA max.
11. The NVMP then sets out how predicted total noise, and predicted noise change are used to determine the type of mitigation to be implemented:
 - *“exceedances of 3 dB or greater and increases of 3 dB or greater—mitigation at source through rail infrastructure solutions will be implemented where reasonably practicable;*
 - *exceedances of greater than 5 and up to 7 dB and increases of greater than 5 dB and up to 7 dB -- at source and/or in the form of noise*

barriers if reasonably practicable and have no other negative effects;

- *exceedances of greater than 7dB and increases of greater than 7dB – at source through rail infrastructure solutions and where these cannot be reasonably practicably achieved, noise barriers will be provided, where reasonably practicable”.*

What is a Noise Scheme of Assessment and how is it judged?

12. The purpose of a Noise Scheme of Assessment is to predict the impact of noise on properties and, if pre-agreed thresholds are exceeded, set out mitigation measures and monitoring arrangements. A Scheme of Assessment would therefore be expected to comprise measurements, methodology, modelled predictions and resulting proposals (which might include mitigation and monitoring).
13. Considering this and the requirements of condition 19, the key tests for the submitted Noise Scheme of Assessment therefore are as follows:
 - Is the Noise Scheme of Assessment sufficient – being a detailed scheme of assessment of vibration effects, with details of proposed monitoring and mitigation measures?
 - Does the Noise Scheme of Assessment contain measurements, methodology, modelled predictions and resulting proposals (which include mitigation and monitoring if applicable)?
 - Does the Noise Scheme of Assessment show how the standards of vibration mitigation set out in the Noise and Vibration Mitigation Policy will be achieved?
 - Does the Noise Scheme of Assessment contain supporting calculations or empirical data, or a combination of the two?
14. In each of these tests there is an implication that as well as the Noise Scheme of Assessment containing the relevant elements, these have been treated correctly. This leads to the overall test:
 - Are the noise-related elements of the Noise Scheme of Assessment considered to be sufficiently robust?
15. If any of these tests were not met, the Noise Scheme of Assessment would need to be rejected. It is the role of the Independent Expert to comment on the robustness of the Scheme of Assessment.
16. However, it is the Local Planning Authority and not the Independent Expert which must decide upon the adequacy of the Noise Scheme of Assessment. Provided that the submitted Noise Scheme of Assessment is considered to be robust then its predictions may be relied upon, as may the mitigation and monitoring measures contained within it.

The Noise and Vibration Mitigation Policy – in relation to vibration

17. The Noise and Vibration Mitigation Policy was approved by the Secretary of State in granting deemed planning permission: it sets out the parameters for

the analysis contained in the Vibration Schemes of Assessment. Its purpose is to ensure that:

“Vibration from trains will not cause damage to structures, and even without mitigation, will be likely only to give rise to ‘adverse comments from occupiers being possible’ at a few properties that are located very close to the railway. At these locations, appropriate mitigation measures will be provided”.

18. The Noise and Vibration Mitigation Policy uses principles contained in British Standard BS647-1:2008 “guide to evaluation of human exposure to vibration in buildings”. This sets numerical ranges, expressed as Vibration Dose Values to predict the “likelihood of adverse comment” as a result of “feelable” vibration. The Noise and Vibration Mitigation Policy sets down thresholds for Vibration Dose Values which this scheme must not exceed: these thresholds are located between the lower and middle of three Vibration Dose Values ranges, below which the British Standard predicts a “low probability of adverse comment”.

19. Thus the threshold Vibration Dose Values which must not be exceeded in this scheme are:

- Day (0700 – 2300 hours): 0.4 m/s^{1.75}
- Night (2300 – 0700 hours): 0.2 m/s^{1.75}

20. The Noise and Vibration Mitigation Policy requires that trackforms be designed and installed adjacent to occupied vibration sensitive buildings using best practicable means to keep within the thresholds. Where mitigation measures that the Noise and Vibration Mitigation Policy would otherwise require are “not reasonably practicable” the condition allows for an equally effective substitute (previously approved in writing by the Council) unless the Council has agreed in writing that the mitigation measure is not reasonably practicable and that there is no suitable substitute. In the event that the thresholds could not be met, the condition would allow for alternative mitigation or potentially insufficient mitigation to meet those thresholds.

21. The Noise and Vibration Mitigation Policy sets out the assumptions that are to be used in the Schemes of Assessment for the numbers and timing of train movements which are as follows (set out in full for ease of reference):

“1.8 The assessment of noise and vibration has been based on two operational patterns of new train services:

- *After the implementation of the works in Phases 1 and 2A, operational services will consist of up to two Chiltern Railways passenger trains per hour each way. The passenger trains will replace the existing passenger service operated by First Great Western between Bicester Town and Oxford stations.*
- *After the implementation of the East West Rail (EWR) link including works in Phase 2B, there are likely to be an additional two passenger trains per hour each way.*

Neither Chiltern Railways or EWR will be running passenger trains throughout the night, and services in late evening and early morning will be at a reduced frequency. A small number of passenger trains may arrive in Oxford after midnight or depart from Oxford before 0600.

1.9 In the operation of Phase 1 and 2A, there are likely to be no more freight trains than operate at present, as there will be no new freight destinations that can be served. When the East-West Rail (EWR) link is in operation, there may be more freight trains. For this reason, additional freight services were included in the noise assessment in the Environmental Statement, so that this reflects a reasonable planning scenario. The actual number of freight services will reflect national freight demand, but will be limited to the maximum number of available freight 'paths' (1 per hour in each direction). Experience shows that about half of the available freight train paths are likely to be used on a given day, which would suggest a reasonable planning scenario of 8 freight train movements between 11pm and 7am. Freight trains will not use the 'new' railway line between Oxford North Junction (where the Bicester to Oxford Line meets the Oxford-Banbury main line) and Oxford, but instead will use the existing main line, as at present.

1.10 The noise and vibration mitigation will be designed based on the assumptions in paragraph 1.8 and 1.9 regarding the numbers and timing of train movements." [Underlining added]

What is a Vibration Scheme of Assessment and how is it judged?

22. The purpose of a Vibration Scheme of Assessment is to predict the impact of vibration on properties and, if pre-agreed thresholds are exceeded, set out mitigation measures and monitoring arrangements. A Scheme of Assessment would therefore be expected to comprise measurements, methodology, modelled predictions and resulting proposals (which might include mitigation and monitoring).
23. Considering this and the requirements of condition 19, the key tests for the submitted Vibration Scheme of Assessment therefore are as follows:
- Is the Vibration Scheme of Assessment sufficient – being a detailed scheme of assessment of vibration effects, with details of proposed monitoring and mitigation measures?
 - Does the Vibration Scheme of Assessment contain measurements, methodology, modelled predictions and resulting proposals (which include mitigation and monitoring if applicable)?
 - Does the Vibration Scheme of Assessment show how the standards of vibration mitigation set out in the Noise and Vibration Mitigation Policy will be achieved?
 - Does the Vibration Scheme of Assessment contain supporting calculations or empirical data, or a combination of the two?

24. In each of these tests there is an implication that as well as the Vibration Scheme of Assessment containing the relevant elements, these have been treated correctly. This leads to the overall test:
- Are the vibration-related elements of the Vibration Scheme of Assessment considered to be sufficiently robust?
25. If any of these tests were not met, the Vibration Scheme of Assessment would need to be rejected. It is the role of the Independent Expert to comment on the robustness of the Scheme of Assessment.
26. However, it is the Local Planning Authority and not the Independent Expert which must decide upon the acceptability of the Vibration Scheme of Assessment. Provided that the submitted Vibration Scheme of Assessment is considered to be robust then its predictions may be relied upon, as may the mitigation and monitoring measures contained within it.

Monitoring

27. The Noise and Vibration Mitigation Policy does not require the monitoring of operational noise and vibration as a continuous exercise: it requires only the monitoring of any mitigation measures that are installed as a result of the findings of the Noise and Vibration Scheme of Assessment (see paragraph 2.11 of the NVMP, **Appendix 3**).

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