



Planning and Noise



Contents

Introduction	3
Planning and noise	4
Policy and guidelines	4
<i>Exceptional circumstances</i>	5
Noise guidance	6
<i>Transportation</i>	6
Noise criteria	7
<i>Vibration</i>	9
<i>Industrial and Commercial Noise</i>	9
<i>Construction Noise</i>	10
<i>Wind Turbine Noise</i>	10
Noise Impact Assessments (NIA)	10
Guidance documents	11



Supplementary Guidance PLANNING AND NOISE

Introduction

1.1 The aim of this supplementary guidance (SG) is to provide developers with further information on dealing with the planning process where new noise sensitive developments are planned near to existing noise sources and where potentially noisy developments are introduced into existing noise sensitive areas. This SG has been prepared in connection with the *West Lothian Local Development Plan* (LDP) and as such forms part of the LDP in line with Section 25 of the Planning etc (Scotland) Act 2006.

1.2 This SG takes into account current policy in relation to planning and noise and provides guidance on undertaking noise impact assessments (NIA) which may be required for any potential development in determining planning applications. The Scottish Government's Planning Advice Note (PAN 1/2011)¹ Planning and Noise and updated noise guidance and standards have been taken into account in the preparation of this SG. The SG is compliant with latest guidance. Details of guidance which has informed this SG are listed at the end of the SG.

1.3 The Technical Advice Note (TAN)² which accompanies PAN 1/2011 offers advice in relation to noise impact assessments also recognises that noise targets are the responsibility of the local authority to determine. The TAN does not offer prescriptive guidance but provides advice which may assist local authorities in the technical evaluation of noise. Target noise criteria for certain types of development are detailed in this SG.

1.4 Specific guidance regarding the assessment of noise from mining activities and wind energy developments are not within the scope of this SG and are included in relevant supplementary guidance topics.

Planning and noise

2.1 Generally developments, where noise is an issue, fall into two main categories:

- (1) The introduction of housing developments or other noise sensitive developments, such as hospitals, schools or residential homes, close to existing significant transportation noise sources (road, rail, and aircraft) or noisy industry or commerce (including entertainment venues and establishments).
- (2) The introduction of industrial or commercial developments close to noise sensitive land uses.

Where developments fall into the categories above, and noise is considered to be a material consideration in determining a planning application, a noise assessment will be required to assess the potential noise impact on or from the development.

2.2 Planning guidance on noise aims to separate noisy and noise sensitive land uses. However, mitigation of noise impact through separation alone can be difficult to achieve. Noise sensitive developments may need to incorporate mitigation measures through design, layout, construction or physical noise barriers to achieve acceptable acoustic conditions.

2.3 Whilst it may be possible to mitigate the adverse effects of noise, noise-sensitive development will rarely be appropriate in areas which are already subject to unacceptably high noise levels.

2.4 Existing industry or commerce need to be protected from the adverse impacts of complaints of noise disturbance from residents of new housing or other sensitive developments.

Policy and guidelines

3.1 The *Proposed Plan* for the *West Lothian Local Development Plan* includes the following policy:

POLICY EMG 5

Noise

There is a presumption against developments that are:

- a. likely to generate significant amounts of noise being located close to noise sensitive developments such as existing or proposed housing; or
- b. residential or other noise sensitive developments being close to noisy land use.

The only exceptions will be where it can be demonstrated that:

- a. through design or mitigation, satisfactory internal and external noise levels can be achieved at the noise sensitive development; and
- b. through design or mitigation, there will be no adverse impact on the continued operation of any existing or proposed business or activity.

The terms of the council's Supplementary Guidance on Noise will apply.

The *Proposed Plan* advises that by guiding development to the right locations and through promoting good design, the planning process can help to avoid or minimise problems associated with noise arising from or impacting upon developments. It also advises that supplementary guidance provides developers with information on dealing with the planning process where new noise sensitive developments are planned near to existing noise sources and where potentially noisy developments are introduced into existing noise sensitive areas.

3.2 Only in exceptional circumstances (see paragraph 3.3) should satisfactory internal noise levels be achievable with windows closed and other means of ventilation provided. Where these exceptional circumstances exist, and achieving satisfactory internal noise levels are based upon closed windows, external amenity areas may well be noisier than would otherwise be considered acceptable. However, good design and layout of a residential development can avoid unacceptable external noise levels within outdoor living areas across the whole development.

Exceptional circumstances

3.3.1 In lieu of NIA, that may be required for development proposals, only an indicative guide can be given to cases which might merit special consideration. Owners, purchasers and developers of land should be aware of the potential constraints on residential and other noise sensitive development near to existing transport or entertainment noise sources.

3.3.2 Exceptional circumstances derive from the aim to promote sustainable development and transport within West Lothian. The benefits of such development include:

- ▶ reducing urban sprawl;
- ▶ reducing uptake of greenfield sites; and
- ▶ promoting higher levels of density near transport hubs, town and local centres.

3.3.3 Exceptional circumstances will, therefore, generally only apply to sites, which are small to medium scale infill sites in urban areas affected by transportation or entertainment noise sources. This will include sites in established residential areas; brownfield sites; town and village centre sites; and sites near public transport hubs.

3.3.4 Exceptional circumstances are only likely to apply to flatted developments near to existing significant transport noise sources (with the exception of aircraft noise) or entertainment noise sources. It may be possible for sites exposed to higher levels of transportation noise to have a mix of flatted development and housing, providing the flatted dwellings are the most exposed facade and provide a significant barrier to the rest of the development site. Where houses are considered within the mix of a development, internal noise levels will have to be achievable with an open window scenario.

3.3.5 Aircraft noise affecting external amenity areas within residential developments cannot be mitigated and therefore there is no restriction on the type of residential development.

3.3.6 Due to the greater annoyance characteristics of industrial/commercial noise it is unlikely that satisfactory outdoor amenity noise levels could be achieved where a residential development places reliance on closed windows to achieve satisfactory internal noise levels. There is also a risk that residential development in these circumstances is more likely to have a significant impact on existing business associated with complaints about noise disturbance.

3.3.7 Unlike transport noise sources, industrial/commercial noise falls under the statutory nuisance legislation which places a duty on the council to take enforcement action where a noise nuisance exists. This would include external noise affecting residential outdoor amenity areas. Exceptional circumstances will therefore not include industrial/commercial noise sources.

3.3.8 Where internal noise levels associated with transport or entertainment noise sources can only be achieved with closed windows, developers will need to demonstrate that all other mitigation measures have been exhausted to reduce external/internal noise levels.

These measures may include:

- ▶ screening by natural barriers, or purpose built acoustic barriers, other buildings or non-critical rooms on exposed building elevations; and/or
- ▶ minimum separation distances from transport sources, improvement to the design and layout of the development.

Noise guidance

4.1 Planning Advice Note (PAN) 1/2011¹ provides advice on the role of the planning system in helping to prevent and limit the adverse effects of noise. The PAN promotes the principles of good acoustic design and a sensitive approach to the location of new development. Information and advice on noise impact assessments (NIA) methods is provided in the associated Technical Advice Note (TAN)². It includes details of the legislation, technical standards and codes of practice for specific noise issues.

4.1.2 The TAN document provides guidance which may assist in the technical evaluation of noise assessment, and recognises that it does not offer prescriptive guidance on noise assessment nor should it be considered as being exhaustive in extent. It also recognises that the choice of appropriate criteria noise levels and relevant time periods are the responsibility of the local authority.

4.1.3 The council seeks to promote a good standard of amenity for its residents and in that respect appropriate noise criteria has been selected to reflect this when considering NIA.

Transportation

4.2 Road traffic

Road traffic noise can be assessed using the method set out in *Calculation of Road Traffic Noise 1998*³ (CRTN) and *The Design Manual for Roads and Bridges 1994*⁴. For existing road noise, measurement of noise levels should be undertaken in accordance with the methodology set out in CRTN. It is, however, acceptable to undertake a shortened survey method as described in CRTN. Where night-time traffic is considered to be significant a noise survey during the night will also be required.

4.3 Rail traffic

The method set out in *The Calculation of Railway Noise*⁵ will be of assistance in determining rail traffic noise. A noise measurement survey will be required for existing track usage. Where the survey is based on noise measurements of a sample of trains using a specific track, the number of train bypasses used in the sample should be sufficiently representative of the total use of the track.

4.4 Industrial or commercial noise

4.4.1 Industrial or commercial noise sources can be difficult and complex to assess and requires to be considered in detail. The use of British Standard BS 4142:2014⁶ is a useful tool in determining the significance of the impact of noise of an industrial or commercial nature.

4.4.2 Developments will be considered on their merits, the methodology of any assessment of the impact of noise will depend on the nature and characteristics of potential or existing noise emissions. It is therefore important that developers have their appointed noise consultants discuss the extent and methodology of any noise assessment with the council's Environmental Health Service at an early stage to avoid unnecessary delay in the planning process.

4.5 Construction site noise

4.5.1 Most developments will have initial site noise associated with the construction phase of the development. It is accepted that higher levels of noise will be associated with what is regarded as a relatively temporary situation. However, construction noise is most effectively controlled by means of the Control of Pollution Act 1974⁷.

4.5.2 Detailed guidance on noise issues relating to construction sites can be found in the British Standard BS 5228:2009⁸.



4.6 *Noise from specific developments*

4.6.1 Wind Farm developments are assessed using specific guidance^{9,10}. The council has also produced a guidance document in relation to noise assessments for wind farms and individual turbine developments.

4.6.2 Noise from mineral extraction sites are governed by specific guidance and are therefore beyond the scope of this SG.

4.6.3 Other developments beyond the scope of this SG such as leisure activities, motor sport events, dog kennels, etc. will be considered on a case by case basis. The methodology for the assessment of noise from other types of developments must be discussed and agreed in advance with the council's Environmental Health Service.

4.6.4 Some developments may have a significant noise impact on recreational, open space or areas of high sensitivity for wildlife. Where appropriate, significant noise impacts affecting these areas may need to be considered.

Noise criteria

4.7.1 The following policies and criteria are not exhaustive and other criteria may apply depending on local circumstances and on the nature and characteristics of noise sources impacting upon any noise sensitive premises. It is important that the developers' noise consultants contact the council's Environmental Health Service in advance of undertaking any NIA. A qualitative assessment may also be required following a quantitative noise impact assessment to consider the perception and how noticeable a noise impact is in affecting the amenity value of the noise sensitive receptor.

4.7.2 In determining the overall significance of noise impact, it may be necessary to undertake a qualitative assessment. This type of assessment will be different for Noise Sensitive Development and Noise Generating Developments. Whilst there is general guidance in TAN 2011, the descriptor for qualitative impacts will require to be discussed in advance with West Lothian Council. Standards of amenity (and noise mitigation measures to be adopted) will be a key consideration when determining the significance of noise impacts.

4.7.3 Residential development subjected to transportation noise sources will have to ensure that internal noise levels are within current guideline levels. The following noise criteria will be used to assess the significance of noise impact on residential development.

4.7.4 *Traffic noise (road, rail and air)*

In recognising the need to provide a balance between meeting noise criteria and achieving a good standard of amenity there may be areas of the NIA that may require further consideration. The following target noise criteria have therefore been chosen to reflect this balance based on *World Health Organisation 1999* guideline values¹¹.

4.7.5 To protect the majority of people from being moderately annoyed during the daytime, the outdoor sound pressure level (free field) should not exceed a target noise level of $L_{Aeq(16hr)}$ 50 dB.

4.7.6 During the night, 23.00-07.00, the facade noise level outside bedrooms should not exceed a target noise level of $L_{Aeq(8hr)}$ 45 dB.

4.7.7 Where the existing noise levels associated with transport sources exceeds the target noise levels the following magnitude of impacts will be attached to the assessment.

Daytime Existing Noise Level ($L_{Aeq(16hr)}$)	Night time existing noise level ($L_{Aeq(8hr)}$)	Magnitude of Impact
50-53	45-48	Minor adverse
>53-55	>48-50	Moderate Adverse
>55	>50	Major Adverse

(For the assessment of aircraft noise the above values can be increased by 2 dB)

4.7.8 It will be expected through good layout and design of a development that the specified target noise criteria should be achieved at receptor locations. Where the magnitude of impact results in a 'moderate adverse' the layout and design of the development or other mitigation should be considered to achieve at least a 'minor adverse' impact. Where the noise impact is considered 'major adverse', noise mitigation measures (acoustic

fencing, noise bunds) other than building layout and design are likely to be required to achieve a 'minor adverse' impact. The extent of mitigation required may be dependent on the number of noise sensitive receptors and their relevant exposure to noise.

4.7.9 Where the relevant noise criteria are not achievable following mitigation measures, consideration will be given as to whether exceptional circumstances apply as detailed in Sn3.3. There may also be potential for flatted dwellings to be utilised as a potential noise barrier to achieve the relevant noise target for the remaining receptors of a development. This will be dependent on the number of receptors in the context of the overall development and the benefit provided.

4.7.10 Where residential developments generate significant traffic volume on the local road network which would lead to significant increase in the existing noise climate and noise exposure the NIA should take this into consideration. In determining existing noise levels, any increase in future noise levels that may reasonably be expected should also be considered.

4.7.11 Noise exposure from proposed new road or rail developments will be considered out with this guide.

4.7.12 Internal noise levels within habitable rooms of dwellings are required to meet the following noise criteria as described in BS 8233¹²;

- Dining rooms $L_{Aeq(16hour)}$ 40 dB, living rooms $L_{Aeq(16hour)}$ 35 dB, $L_{Aeq(16hr)}$ 35 dB and $L_{Aeq(8hour)}$ 30 dB for bedrooms daytime and night-time respectively. Where internal noise levels are to be achieved with closed windows (i.e. in those cases where exceptional circumstances exist), alternative means of ventilation which do not compromise the facade insulation must be provided.
- For single sound events, the outdoor facade sound pressure level (windows open) at night outside bedrooms should not exceed L_{AFmax} 60dB. Inside bedrooms at night noise levels should not exceed L_{AFmax} 45 dB. In determining the significance of any noise events above this level, consideration will be given to the number of events and the maximum sound pressure level as a small number of events with a high maximum sound pressure level will affect sleep.



Vibration

4.8 Reference to noise within this document includes vibration but potential vibration impact will be considered separately where the potential for significant vibration issues are identified.

Industrial and Commercial Noise

5.1 Industrial and/or commercial noise should be assessed using BS4142:2014. Additional criteria may be applicable depending on the nature of the sound source. Commercial noise sources such as shop fans and ventilation systems for example require to achieve Noise Rating Curve NRC 25 during the night when measured within any living room or bedroom within a noise sensitive property with windows open for ventilation. A lower Noise Rating Curve may be applicable depending on the nature and characteristics of the noise source, for example where a discernible tone is obvious or where the existing background noise environment is low (less than 30dB) NR 20 may be more appropriate. In considering the context of any noise impact as described in BS4142, the rated noise level should be used when comparisons are made against the existing noise environment.

5.1.2 When considering the prediction of noise levels within dwellings from external noise sources an open window should be considered to achieve 10 dB noise reduction from a free-field level. Taking precautionary approach no further reductions for room acoustics should be considered. Where the noise source contains significant lower frequency noise in the octave band frequency range 63– 250Hz, 5dB in those octave bands should be considered appropriate for the open window. Above 250Hz, 10dB attenuation for the open window shall apply.

5.1.3 New commercial developments where amplified music or broadcasting (including entertainment venues and establishments) is an activity require to comply with an inaudibility criterion within any neighbouring noise sensitive property. For design purposes Noise Rating Curve NR15 should be utilised when predicting internal noise levels. Open windows should be considered to provide 5dB attenuation at bass beat frequencies of 63Hz and 125Hz and 10 dB at higher frequencies.

Construction Noise

- 5.2 Construction site operations in general will be restricted to 08.00 – 18.00 Monday – Friday and 08.00 – 13.00 Saturday so that noise is not audible at noise sensitive premises out with these times.
- 5.2.1 Under normal circumstances, evening, night-time and Sunday working will not be considered reasonable. There may be exceptions to this, for example for reasons of public safety and/or Police requirements. In such cases contractors need to demonstrate that other Authorities require work to take place at these times.
- 5.2.2 Noise emissions from construction site activity, is controlled by the Control of Pollution Act. Section 60 of this legislation allows where necessary, restrictions to be placed on construction sites. This may include time restrictions, plant and machinery restrictions, and noise limits. However, many issues with construction sites are usually resolved informally. Vehicle reversing alarms for on-site plant should utilise non-tonal reversing alarms where activities are in close proximity to noise sensitive premises.

Wind Turbine Noise

- 5.3 Advice on the assessment of noise for wind turbines is contained in a separate SG.

Noise Impact Assessments (NIA)

- 6.1 Where a NIA is required, these must be undertaken by suitably qualified and competent persons, usually a noise consultant.
- 6.2 Noise reports must be concise and contain sufficient information for the authority to assess the contents. Insufficient detail on the methodology and calculations used can result in a delay in the review process. The report should provide the basic information required for environmental noise reports and in particular information that is contained within BS 7445:2003¹³ or the appropriate relevant standard.
- 6.3 Except in those cases where exceptional circumstances are identified, internal noise levels within noise sensitive premises must be calculated based on an open window scenario. The degree of sound insulation afforded by a partially open window should be taken as 10 – 15 dB from a free-field level. For transportation noise sources 15dB should be considered as appropriate attenuation of a partially open window. Industrial noise due to its nature and characteristics is only likely to achieve the lower limit of noise insulation across a partially open window (10 dB). Additional requirements may be appropriate as detailed in Section 5.2.1 and 5.2.2.
- 6.4 Where a noise assessment is undertaken for a residential development, the appropriate number of receptors to be considered should be discussed with the council's Environmental Health Service. Generally this will be limited to the worst affected noise sensitive receptor locations.
- 6.5 Any assumptions used in the prediction of noise levels must be clearly stated in the noise report. Reports must provide a sample calculation in order to demonstrate clearly how noise figures have been obtained. Where noise modelling using computer software is undertaken a summary of the input parameters and assumptions made to the model shall be clearly detailed.

Guidance documents

1. The Scottish Government: [Planning Advice Note 1/2011, Planning and Noise](#)
2. The Scottish Government Technical Advice Note, Assessment of Noise
3. Calculation of Road Traffic Noise (DoT, Welsh Office 1988)
4. Design Manual for Roads and Bridges (DoT, 1994)
5. The Calculation of Railway Noise (DoT, Welsh Office 1995)
6. BS4142:2014 Methods for rating and assessing industrial and commercial noise
7. Control of Pollution Act 1974
8. BS5228:2009 Code of practice for noise and vibration control on construction and open sites; Part 1: Noise, Part 2: Vibration
9. A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise, Institute of Acoustics 2013
10. The Assessment & Rating of Noise from Wind Farms. ETSU-R-97
11. World Health Organisation, Guidelines for Community Noise, 1999
12. BS8233:2014 Sound Insulation and Noise Reduction for Buildings – Code of Practice
13. BS7445:2003 Description and Measurement of Environmental Noise.

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