



Llywodraeth Cymru
Welsh Government

www.cymru.gov.uk

Welsh Government

A noise action plan for Wales 2013–2018

December 2013

A noise action plan for Wales

2013 – 2018

Version 1.0
December 2013

Contents

Ministerial foreword	v
Contributors to the development of this action plan	vi
Preface – the noise action planning process	1
Environmental noise maps	
A noise action plan for Wales	
Revocations	
Public consultations held in the last five years	
Review and update process	
1 Why noise matters	5
1.1 Overview	
1.2 Sustainable development principles	
1.3 Impacts on human health and wellbeing	
1.4 Economic impacts	
1.5 Impacts on wildlife	
1.6 Tranquillity	
1.7 Actions and long-term strategy	
2 Noise and new development	15
2.1 Overview	
2.2 Planning policy	
2.3 Best practice in construction	
2.4 Actions and long-term strategy	
3 Tranquil green space in the built environment	21
3.1 Overview	
3.2 Developing tranquil urban green space	
3.3 Celebrating tranquil urban green space	
3.4 Protecting tranquil urban green space	
3.5 Actions and long-term strategy	
4 Road noise management	31
4.1 Overview	
4.2 Who is responsible?	
4.3 The noise maps	
4.4 Priority areas	
4.5 Motorways and trunk roads	
4.6 Local authority roads	
4.7 Traffic noise and air quality	
4.8 Traffic noise and road safety	
4.9 Noisy vehicles	
4.10 Quieter vehicles	
4.11 Actions and long-term strategy	
5 Railway noise management	47
5.1 Overview	
5.2 Who is responsible?	
5.3 The noise maps	

5.4	Electrification	
5.5	Priority areas	
5.6	Services provided by the rail industry	
5.7	Actions and long-term strategy	
6	Industrial noise management	54
6.1	Overview	
6.2	Who is responsible?	
6.3	Integrated pollution prevention and control	
6.4	Statutory nuisance	
6.5	Actions and long-term strategy	
7	Noisy neighbourhoods	60
7.1	Overview	
7.2	Legislation	
7.3	Consultations on legislative changes	
7.4	Types of neighbourhood noise	
7.5	Actions and long-term strategy	
8	Other forms of noise	72
8.1	Aircraft noise management	
8.2	Port noise management	
8.3	Wind turbine noise and the planning process	
8.4	Minerals operations noise and the planning process	
8.5	Occupational noise and hearing damage	
8.6	Recreational noise and hearing damage	
9	The Cardiff and Penarth agglomeration	82
9.1	Overview	
9.2	Cardiff Council	
9.3	The Vale of Glamorgan Council	
9.4	Major industry	
9.5	Actions and long-term strategy	
10	The Newport agglomeration	90
10.1	Overview	
10.2	Newport City Council	
10.3	Caerphilly County Borough Council	
10.4	Major industry	
10.5	Actions and long-term strategy	
11	The Swansea and Neath Port Talbot agglomeration	99
12.1	Overview	
12.2	The City and County of Swansea	
12.3	Neath Port Talbot County Borough Council	
12.4	Major industry	
12.5	Actions and long-term strategy	
	Annex A – references	110
	Annex B – list of actions and long-term strategy	118
	Annex C – checklist of requirements for noise action plans	125

Ministerial foreword

Noise affects us all to a greater or lesser degree, and it is important that we identify areas with particular problems and produce effective measures to address the issues involved.

I am aware of the effect that noise pollution can have and I very much look forward to working with you as we implement the actions outlined in this document. By taking account of noise pollution early on in any decision-making processes, we can seek to avoid many of the difficulties that we currently face.

Improving the local environment for our most disadvantaged citizens is one of my highest priorities. Tackling noise pollution plays a key part in that approach and I believe it should be treated with particular seriousness when it coincides with other health factors such as poor air quality, antisocial behaviour, low housing standards and lack of green space. We should also look for opportunities to tackle other issues alongside noise, such as air quality or road safety.

The Welsh Government sets the broad policy framework for decision-makers in Wales. However, many policies and decisions, such as the handling of complaints about noisy neighbours or entertainment venues, only affect local communities. It is important for those decisions made at a local level to take into account the needs and views of local people.

I am delighted that so many of the different bodies with noise responsibilities in Wales have contributed to this action plan and I would like to thank everyone involved. I look forward to seeing further progress in our collaborative work to tackle the serious issue of noise pollution.



A handwritten signature in dark ink, appearing to read 'Alun Davies', with a stylized flourish at the end.

Alun Davies AM
Minister for Natural Resources and Food

Contributors to the development of this action plan

All Wales Environmental Permitting Regulations (EPR) Link Group
All Wales Pollution Technical Panel
Association of Noise Consultants
Blaenau Gwent County Borough Council
Bridgend County Borough Council
Caerphilly County Borough Council
Cardiff Council
Carmarthenshire County Council
Chartered Institute of Environmental Health
City and County of Swansea
Denbighshire County Council
Department for Environment, Food and Rural Affairs (Defra)
Dyfed-Powys Police
Extrium Limited
Gwent Police
Health and Safety Executive
Isle of Anglesey County Council
Merthyr Tydfil County Borough Council
Ministry of Defence
Natural Resources Wales
Neath Port Talbot County Borough Council
Network Rail
Newport City Council
Noise Abatement Society
North Wales Police
Pembrokeshire County Council
Port Health Technical Panel
Public Health England
Public Health Wales
Rhondda Cynon Taf County Borough Council
South Wales Police
South West Wales Integrated Transport Consortium (SWWITCH)
Torfaen County Borough Council
Vale of Glamorgan Council
Wrexham County Borough Council

Preface – the noise action planning process

*Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise*¹ is more commonly known as the Environmental Noise Directive, and is referred to throughout most of this document simply as “**the Directive**”.

The aim of the Directive is to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise.

The Directive defines **environmental noise** as unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic, air traffic, and from sites of industrial activity.

The requirements of the Directive were given legal force in Wales through the *Environmental Noise (Wales) Regulations 2006*² and the *Environmental Noise (Wales) (Amendment) Regulations 2009*³ (collectively “**the Regulations**”).

Environmental noise maps

Under the Regulations, the Welsh Ministers had an obligation, no later than 30 June 2012, to make strategic noise maps for:

- **agglomerations** (large urban areas with populations of more than 100,000);
- **major roads** (those with more than three million vehicle passages per year); and
- **major railways** (those with more than 30,000 train passages per year).

There are three agglomerations in Wales:

- the Cardiff and Penarth agglomeration;
- the Newport agglomeration; and
- the Swansea and Neath Port Talbot agglomeration.

There are no major airports in Wales qualifying for noise mapping or action planning under the Regulations.

The noise maps were all made by the required date, and have been published online at <http://data.wales.gov.uk/apps/noise>. The noise levels were calculated by Extrium Limited, acting under contract from the Welsh Government, and the maps replace those made in 2007 for the busiest major roads and railways in Wales and the two largest Welsh agglomerations.

¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0049:en:NOT>

² <http://www.legislation.gov.uk/wsi/2006/2629>

³ <http://www.legislation.gov.uk/wsi/2009/47>

As well as being more up-to-date, the new noise maps were prepared using more accurate input data than the 2007 maps. The new noise maps therefore have a higher level of confidence associated with them than the 2007 maps, but they are still not considered to be accurate to the level of individual properties, and their use should be limited to strategic action planning.

A noise action plan for Wales

Under the Regulations, the Welsh Ministers also have an obligation, no later than 18 July 2013, to draw up action plans for places near major roads and major railways, and for agglomerations.

The Regulations apply to environmental noise to which humans are exposed in particular in built-up areas, in public parks or other **quiet areas** in an agglomeration (see Chapter 3), near schools, hospitals and other noise-sensitive buildings and areas. They do not apply to noise that is caused by the exposed person, noise from domestic activities, noise created by neighbours, noise in workplaces or noise inside means of transport or due to military activities in military areas.

In June 2012, John Griffiths AM, Minister for Environment and Sustainable Development, decided that the Welsh Government should prepare a single consolidated **noise action plan for Wales**⁴. It would include within it the environmental noise action plans required by the Regulations, together with information on Wales-wide policies relating to those forms of noise not covered by the Regulations, such as **neighbourhood noise** (see Chapter 7). This would give the responsible bodies themselves and others with a specialist interest in noise an overall picture of the current state of play and clarity in what is expected from the public sector and other organisations in relation to noise over the next five years. It would also avoid the repetition of material that inevitably results from having separate action plans for major roads, major railways and agglomerations.

For the purposes of the Regulations:

- this Preface, together with Chapters 1-4 and 9-11 of this document form the action plan for major roads in Wales;
- this Preface, together with Chapters 1-3, 5 and 9-11 of this document form the action plan for major railways in Wales;
- this Preface, together with Chapters 1-6 and 9 of this document form the action plan for the Cardiff and Penarth agglomeration;
- this Preface, together with Chapters 1-6 and 10 of this document form the action plan for the Newport agglomeration; and
- this Preface, together with Chapters 1-6 and 11 of this document form the action plan for the Swansea and Neath Port Talbot agglomeration.

⁴ <http://wales.gov.uk/about/cabinet/decisions/dr2012/aprjun/enviro/jg1606/?lang=en>

Where an action plan has been adopted under the Regulations and identifies a public authority⁵ as responsible for a particular action, that public authority must treat the action plan as its policy insofar as it relates to that action. A public authority may only depart from such a policy if it provides written reasons for departing from that policy and publishes those reasons.

The legal obligation under the Regulations for public authorities to treat action plans as policy only applies to those elements of the action plan that are within the scope of the Regulations.

The references to legislative provisions provided in the noise action plan are intended as illustration of how noise is regulated in Wales, and should not be taken as advice on the precise application of the law. For full and detailed information on noise and the law, readers should refer to the legislation itself or seek advice from their own legal advisors.

Revocations

The following documents, which include action plans adopted in January 2009 based on the 2007 noise maps, are superseded by this document and hereby revoked:

- Environmental noise action planning (Wales) guidance – agglomerations, roads and railways (2008);
- Environmental noise action planning (Wales): Cardiff and the Vale of Glamorgan agglomeration action plan (2009);
- Environmental noise action planning (Wales): Railway action plan for Wales (2009);
- Environmental noise action planning (Wales): Roads action plan for Wales (2009);
- Environmental noise action planning (Wales): Swansea / Neath Port Talbot agglomeration action plan (2009);
- Implementation of environmental noise action plans in Wales: Procedure for the designation of quiet areas in agglomerations (2011); and
- Implementation of environmental noise action plans in Wales: The designation of Noise Action Planning Priority Areas (2011).

Public consultations held in the last five years (see also section 7.3)

13 June 2008 to 8 August 2008 – action planning guidance

5 November 2008 to 31 December 2008 – first round noise action plans

⁵ In this regulation “public authority” includes any person who exercises functions of a public nature, but does not include (a) either House of Parliament or a person exercising functions in connection with proceedings in Parliament, (b) courts or tribunals, or (c) the National Assembly for Wales.

7 February 2011 to 17 May 2011 – more effective responses to antisocial behaviour

<http://www.homeoffice.gov.uk/publications/consultations/cons-2010-antisocial-behaviour/>

10 February 2011 to 5 May 2011 – priority areas and quiet areas procedures

<http://wales.gov.uk/consultations/environmentandcountryside/noisedirective/?lang=en>

13 February 2012 to 7 May 2012 – first round quiet areas

<http://wales.gov.uk/consultations/environmentandcountryside/quietareas/?lang=en>

9 May 2012 to 18 July 2012 – proposals for a Sustainable Development Bill

<http://wales.gov.uk/consultations/sustainabledevelopment/sdbill/?lang=en>

9 May 2012 to 14 August 2012 – proposals for an Active Travel Bill

<http://wales.gov.uk/consultations/transport/activetravelbill/?lang=en>

18 July 2013 to 10 October 2013 – second round quiet areas and noise action plan for Wales

<http://new.wales.gov.uk/consultations/environmentandcountryside/noise-action-plan-for-wales/?lang=en>

23 October 2013 to 15 January 2014 – proposals for an Environment Bill

<http://wales.gov.uk/consultations/environmentandcountryside/environment-bill-white-paper/?lang=en>

4 December 2013 to 26 February 2014 – proposals to reform the planning system in Wales

<http://wales.gov.uk/consultations/planning/draft-planning-wales-bill/?lang=en>

Review and update process

- a) The Welsh Government will host meetings open to all bodies having responsibilities under this action plan at least twice yearly during the lifetime of the plan, to review progress in relation to actions and long-term strategy.
- b) The Welsh Government will update the plan itself as and when it deems necessary, including carrying out at least one review incorporating a full public consultation no more than five years after its first adoption.

1 Why noise matters

1.1 Overview

Most people cannot imagine living in a world devoid of sound. Speech, music, the sounds of nature and so on are greatly valued. Wales is a nation of song, and the last thing the Welsh Government wants is a Wales that is silent. But **noise**, unwanted or harmful sound resulting from human activities, is a pollutant.

At its least intrusive, traffic noise is an undesirable continuous background rumble that most people are not normally conscious of because it is considered part and parcel of urban living. However, it could spoil people's appreciation of the beauty of nature if experienced at the top of a mountain or in the middle of a national park. At its worst, noise can cause hearing loss, contribute to raised blood pressure and even bring forward heart attacks, although such cases are relatively rare. The negative impact of noise on people mostly takes the form of annoyance, which includes its ability to mask and detract from the enjoyment of positive sounds, and sleep disturbance. In other words, exposure to moderate levels of noise over long periods of time can amount to a reduction in wellbeing or quality of life.

However, most environmental noise sources, such as transport and energy infrastructure, are also essential contributors to our quality of life. The challenge therefore is to take a balanced approach to managing noise which considers the needs of individuals as well as the requirements of business and industry, so that our quality of life is not reduced in other ways.

People are aware of noise when it irritates them, and are aware of the relief that comes from entering a place of tranquillity. Monetary values can be placed relatively straightforwardly on certain types of noise impact, notably house prices. But the effects of noise on people's state of wellbeing are not limited to just the times when they are consciously aware of it, and noise created by humans also has a significant potential to affect wildlife. Scientists are just beginning to understand some of the less obvious ramifications of the noisy world of which Wales is a part.

1.2 Sustainable development principles

Almost everything that people do creates sound, and noise – unwanted sound – is to a certain extent an inevitable by-product of life. Yet for the reasons described in more detail in the sections below, and in the interests of a healthy, fair and prosperous society, it is important to have a legal and policy framework in place that:

- protects people and wildlife from unacceptable or harmful levels of noise intrusion; and
- gives everyone access to tranquil places where they can find respite from man-made sights and sounds.

In Wales, **sustainable development** means enhancing the economic, social and environmental wellbeing of people and communities, achieving a better quality of life for our own and future generations.

The Welsh Government's vision of a sustainable Wales includes:

- healthy, biologically diverse and productive ecosystems that are managed sustainably; and
- communities that are safe, sustainable, and attractive places for people to live and work, where people have access to services and enjoy good health.

To achieve this, sustainable development has been adopted as the central organising principle of the Welsh Government, along with a commitment to encourage and enable others to embrace the principle also.

Three core aspects of embedding sustainable development in our planning and delivery are:

- **long-termism:** all decisions focus on the long-term, sustainable wellbeing of people and communities, seeking benefits now and for future generations;
- **integration:** multiple benefits are sought through integrated action that optimises social, economic and environmental outcomes; and
- **involvement:** engaging with, and involving, the people and communities that will be affected by decisions.

1.3 Impacts on human health and wellbeing

The Welsh Government has overall responsibility in Wales for protection from threats to public health, including environmental hazards such as air pollution and noise.

Public Health Wales and the Centre for Radiation, Chemical and Environmental Hazards (part of the former Health Protection Agency, now Public Health England) provide specialist public health advice to a broad range of partner agencies and members of the public in Wales in relation to non-occupational noise exposures. This advice is intended to give people power to protect and improve health and wellbeing in its broadest sense and to reduce inequities and variations in exposure.

The ambition of the Welsh Government, public health agencies in Wales, Health Boards and local authorities is to achieve a healthier, happier and fairer Wales. They are all working together to ensure that decision-makers at all levels are informed by the latest evidence regarding the effects of noise on health and the uncertainties associated with that evidence.

Box 1: The science of noise and human health

According to preliminary results from a World Health Organization pilot study⁶, air pollution and noise are estimated to be the leading causes of the environmental burden of disease in the European Region.

The World Health Organization's definition of **health** is "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity". In addition to the physiological impacts on health from environmental hazard exposures, impacts of environmental factors on psychological health, wellbeing and quality of life have developed an elevated level of public health significance⁷.

In 2008 Defra commissioned Dr Bernard Berry and Dr Ian Flindell to undertake a review of research into the links between noise and health, and their findings were published in July 2009⁸. Their work identified sufficient evidence to suggest a link between, and provide some evidence on dose-response relationships for, noise and:

- annoyance;
- cardiovascular effects;
- sleep disturbance;
- cognitive development; and
- hearing impairment.

In particular, it concluded that a dose-response relationship between noise and myocardial infarction could form the basis of a valuation methodology for the cardiovascular effects of transportation noise. However, owing to the large number of confounding factors and technical uncertainties associated with this relationship, there was considered to be a high risk that noise management decisions informed by cost-benefit analysis based on such dose-response relationships might not have the expected effects.

In 2010 the Health Protection Agency published the report *Environmental noise and health in the UK*⁹, which concluded:

"Environmental noise is a problem in the UK today and many people are concerned about its possible effects on health. In terms of wellbeing we have little doubt that a significant number of people are adversely affected by exposure to environmental noise. If it is accepted that health should be defined in such a way as to include wellbeing then these people can be said to suffer damage to their health as a result of exposure to environmental noise. There is increasing evidence that environmental

⁶ <http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/evidence-and-data/environmental-burden-of-disease-ebd>

⁷ <http://www.scotland.gov.uk/Publications/2005/10/2791230/12310>

⁸ <http://archive.defra.gov.uk/environment/quality/noise/igcb/publications/healthreport.htm>

⁹ <http://www.hpa.org.uk/ProductsServices/ChemicalsPoisons/Environment/Noise/>

noise, from both aircraft and road traffic, is associated with raised blood pressure and with a small increase in the risk of coronary heart disease.”

This statement suggests that it is plausible that annoyance caused by the different types of environmental noise exposures may result in indirect and less tangible public health outcomes such as adverse impacts on psychological health, wellbeing and quality of life.

In 2011 the World Health Organization published the report *Burden of disease from environmental noise: Quantification of healthy life years lost in Europe*¹⁰. The report estimated that at least one million healthy life years¹¹ are lost every year from traffic-related noise in the western part of Europe, specifically:

- 61,000 years for ischemic heart disease;
- 45,000 years for cognitive impairment of children;
- 903,000 years for sleep disturbance;
- 22,000 years for tinnitus; and
- 654,000 years for annoyance.

In 2011 the Health and Safety Laboratory produced a report for Defra, which sought to monetise the health costs of noise-induced hypertension, estimating the number of additional cases of acute myocardial infarction, stroke and dementia¹² in England and Wales based on hypertension caused by road traffic noise. Key limitations of this work were (i) that it assumed that the dose-response relationship between road traffic noise and hypertension was the same as that observed between aircraft noise and hypertension, and (ii) that conclusions could not be drawn with any confidence regarding the effects of noise on people already suffering from hypertension.

A consortium led by AECOM produced a paper for the InterNoise 2012 conference¹³ highlighting uncertainties in the derivation of dose-response relationships between environmental noise and cardiovascular disease. It reported that there are still relatively few studies investigating these associations, compared to the number that focus on air pollution. It presented a review of recent epidemiological studies and found that information about low and high noise doses was lacking. The report concluded that based on the current evidence, substantial uncertainties exist with regard to the lower limits at which environmental noise might exert impacts on health.

In 2012, Public Health Wales and local authorities in Wales undertook a review of routinely collected data pertaining to complaints of annoyance, including those arising from noise exposures from a variety of different

¹⁰ <http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/noise/publications/2011/burden-of-disease-from-environmental-noise.-quantification-of-healthy-life-years-lost-in-europe>

¹¹ Healthy life years or **disability-adjusted life years** are the sum of the potential years of life lost due to premature death and the equivalent years of “healthy” life lost by virtue of being in states of poor health or disability.

¹² <http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=17601>

¹³ <http://ince.publisher.ingentaconnect.com/content/ince/incecp>

sources¹⁴. This work aimed to determine complaint occurrence patterns, rates and trends over time, explore socioeconomic status links and identify areas for targeted action and intervention. For a five-year period (2005/6 to 2009/10), based on data obtained from eleven local authorities across Wales, a total of 285,352 annoyance complaints were reported, of which 84% were recorded by postcode. A fifth of these related to annoyance arising from noise exposures. Analysis of complaints by cause of annoyance revealed that noise concerns increased over the study period in four local authority areas. This increase was considered significant when rates in 2005/6 were compared with those in 2009/10, but variation also occurred in intervening years. In addition, strong associations were observed in analyses of noise-related complaint rates and deprivation status, where rates increased with rising levels of deprivation.

1.4 Economic impacts

An effective noise management regime is important to our key sectors. For the construction sector, the planning, health and safety and neighbourhood noise regimes all have a key role to play. For the tourism sector, it is important that minimum levels of unwanted noise are preserved in the natural environment, in Wales' National Parks, in Areas of Outstanding Natural Beauty and on the Wales Coastal Path, as this forms an essential part of the Wales offer.

It is important that a balanced approach is taken to the management of noise that takes into account the needs of different sectors as well as those of new and expanding industry. An effective noise management regime will avoid placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business.

The "WebTAG" methodology included in *Welsh Transport Planning and Appraisal Guidance*¹⁵ may be used to estimate noise-related annoyance in monetary terms linked to house prices. Various other methodologies for quantifying financial impacts arising from the effects of noise on human health have been published by bodies such as the Interdepartmental Group on Costs and Benefits noise subject group¹⁶, the European Environment Agency¹⁷ and the World Health Organization¹⁸. These may be used when weighing up the costs and benefits of various options for intervention. However, it is essential that anyone who uses these methodologies understands their limitations, and the uncertainties and assumptions associated with them. It is also important to note that there are no established methodologies for putting a full monetary value on the impacts of certain particular types of noise, such as domestic noise.

¹⁴ <https://www.gov.uk/government/publications/chemical-hazards-and-poisons-report-issue-23>

¹⁵ <http://new.wales.gov.uk/topics/transport/publications/weltag/?lang=en>

¹⁶ <https://www.gov.uk/noise-pollution-economic-analysis>

¹⁷ <http://www.eea.europa.eu/publications/good-practice-guide-on-noise>

¹⁸ http://www.euro.who.int/_data/assets/pdf_file/0008/179117/Methodological-guidance-for-estimating-the-burden-of-disease-from-environmental-noise-ver-2.pdf

In addition to its effect on house prices and the monetary valuation of noise-related health impacts, noise will have economic impacts where it can be linked to reduced achievement at school, absence from work, tiredness at work, distractions or poor communication in the workplace and impacts on tourism.

Box 2: The science of noise and productivity

In 2011 the Transport Research Laboratory produced a report for Defra looking at the evidence on potential mechanisms through which noise exposure might be linked to productivity¹⁹. It prioritised effects based on the available evidence and focused on the two most promising areas – impacts on productivity owing to noise-induced sleep disturbance, and impacts via academic performance. Workplace distraction was not investigated in detail as the role for government intervention in this area was seen to be relatively weak.

The report found work in Australia and Japan, which demonstrated that the economic impacts of sleep disturbance could be derived in principle. A monetary value for the UK could potentially be determined using a method similar to that in the Australian study, but it would require a robust estimate of the proportion of the population suffering from a sleep disorder or awoken at night owing to noise. Such an estimate is not readily available, but may emerge from research within the next five years.

As for linking the effects of noise exposure in an academic environment to productivity in the workplace, the report found no studies that addressed the complete mechanism. Work has been done linking noise and academic performance in primary school children. Work has also been done linking academic performance in secondary school children to gross domestic product. To make the link between these different components, further evidence is required to relate impacts on learning at a young age to academic achievement later in education.

The report found evidence to suggest that office noise can cause disturbance and adversely affect productivity. However, the control and mitigation of such sources is the responsibility of employers and they should have sufficient incentive to address this problem when it arises.

1.5 Impacts on wildlife

Humans aren't the only species with a sense of hearing, so it stands to reason that if human health and wellbeing can be adversely affected by man-made noise, so might many forms of wildlife. But it is not straightforward to predict what that impact might be. The audible range of frequencies and the extent to

¹⁹ <http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=17602>

which hearing is relied upon to survive and thrive varies from species to species. Some prey species may do well in noisy areas where their predators are deterred from hunting. Plant species may be affected positively or negatively by noise, if the animal species that consume them or help spread their seeds leave the area because of man-made noise. Nor is it straightforward to directly measure the effects of noise on wildlife, because observed effects of a noise source on nearby wildlife may not be caused exclusively by the noise that it produces.

A number of animal and plant species found in the wild are protected at a European and UK level from being harmed or disturbed²⁰. If someone needs to undertake an activity that is likely to disturb a protected species, such as development of a site, they may need to obtain a licence before carrying out that activity. Paragraph 13.15.2 of *Planning Policy Wales*²¹ (discussed in more detail in the next chapter) reflects this position, stating that special consideration is required where noise-generating developments are likely to affect a protected species.

In addition to protected species, a number of priority species have been identified under the UK Biodiversity Action Plan²² as requiring priority conservation action, and Wales has its own national list of species of principal importance.

It is difficult or perhaps even impossible at the present time to identify situations where noise is likely to affect a protected species, a priority species or a species of principal importance to Wales, because few if any of those species have been subject to rigorous research to determine their sensitivity to noise in population terms. However, the number of publications in this field has increased steadily in recent years, and understanding of the subject, and therefore the ability to sensibly consider the effects of noise on wildlife, is likely to grow substantially over the course of the next ten years.

The *Natural Environment and Rural Communities Act 2006*²³ requires every public authority (as defined in that Act) to have regard to the purpose of conserving biodiversity when carrying out its functions. So far as the state of the science allows, public authorities in Wales should therefore aim to manage noise so as to promote not only health and quality of life for humans but also biodiversity. The extent to which this principle may be applied in practice will increase as scientific understanding of the effects of noise on wildlife improves.

²⁰ <http://jncc.defra.gov.uk/page-1747>

²¹ <http://wales.gov.uk/topics/planning/policy/ppw/?lang=en>

²² <http://jncc.defra.gov.uk/page-5155>

²³ <http://www.legislation.gov.uk/ukpga/2006/16>

Box 3: The science of noise and biodiversity

Bristol University carried out a review of the state of the science on the effects of man-made noise on UK biodiversity²⁴ under a contract managed by Defra and the Welsh Government as part of the UK-wide noise and nuisance evidence programme in 2011/12.

The major finding of the review was that a strong evidence base does not yet exist regarding the potential impact of anthropogenic noise on non-marine UK priority species and species of principal importance to England, Scotland, Wales and Northern Ireland. Definite conclusions could be made only about the reed bunting, a bird that exhibits shifts in song frequency in response to road traffic noise. It is also likely that brown long-eared bats, European robins, house sparrows, starlings, bullfinches and common toads are affected by road traffic noise to some degree.

Common issues preventing strong conclusions for other species include a lack of sufficient controls to rule out potential confounding factors (changes in the behaviour of animals near roads may be the consequence of differences in lighting, disturbance or habitat differences rather than noise) and the use of acoustic measurements that are more relevant to humans than to the auditory capabilities of the study species. In addition, hardly any studies directly considered how anthropogenic noise might impact the fitness of individuals. While several studies provided good proxies for fitness, definite conclusions in this regard were considered to be premature.

To make a fair assessment of the extent to which anthropogenic noise affects non-marine wildlife in general and UK priority species and species of principal importance in particular will require further empirical work. Such work should ideally address the current taxonomic bias towards studies on birds²⁵, include carefully designed experimental studies, quantify the noise sources of relevance in a way that relates to the hearing capabilities of the study organism, look beyond short-term studies to consider chronic and repeated exposure, focus on response indicators that can inform models of population viability, and investigate impacts at community and ecosystem levels as well as effects on individuals.

1.6 Tranquillity

Quality of life may be enhanced when people have quiet and inspiring places where they can escape, contemplate and think outside their often hectic, sometimes stressful, urban environments, and interact more closely with living nature. A range of tranquil environments is likely to be beneficial, from the brief escape to an urban oasis that could be a pocket park or even one's own

²⁴ <http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=18136>

²⁵ <http://rspb.royalsocietypublishing.org/content/281/1776/20132683.full>

private garden, to a more demanding challenge with nature in the great outdoors further afield.

The extent of Wales that is physically remote from human activity can decline when new development occurs, and halting this trend solely to preserve that remoteness is neither a realistic prospect nor compatible with what the Welsh Government means when it talks about sustainable development. Increasing the number of people visiting and appreciating the tranquillity of the remoter parts of Wales will act to reduce the remoteness of those places, but, if done right, need not reduce their tranquillity.

Though the degree of tranquillity of urban green spaces may not compare to that of remoter, wilder, less developed parts of Wales, the value of tranquillity of urban green spaces must not be underestimated. For unlike remoter parts of Wales, they offer a locally accessible experience of tranquillity available to a wider community including children and others without their own transport. A more detailed focus on the tranquillity of urban green spaces in the largest towns and cities in Wales has been established through the process of designating **quiet areas in agglomerations** (see Chapter 3). This work factors in accessibility, green space management and the range and level of use made of urban green spaces to reflect the particularly high value that their relative tranquillity offers to society.

In 1997 and 2009 the Countryside Council for Wales mapped the areas of rural Wales considered to be tranquil. There may be a case for reviewing the methodology used in this mapping and adopting a more sophisticated approach in any future rounds. This could take into account the perceived value of tranquillity to people, positive things likely to contribute to a visitor's sense of tranquillity, and, where appropriate, the actual likely level of disturbance associated with proximity to human activities, taking into account mitigating factors such as shielding by hills and mountains.

1.7 Actions and long-term strategy

- a) The Welsh Government will:
 - i) continue to engage actively with research at a UK level primarily through the Defra-led noise and nuisance evidence programme, seeking to influence it to ensure that it meets the needs of Wales and providing support to the management of individual contracts where appropriate;
 - ii) maintain a list of noise contacts in public authorities across Wales;
 - iii) keep noise contacts in public authorities across Wales informed of any significant new research findings, guidance or standards relevant to their roles; and
 - iv) work with the Centre for Radiation, Chemical and Environmental Hazards when Public Health England is in a position to deliver its proposed strategy on noise and health, which the Health Protection Agency consulted on in 2012.

- b) Public Health Wales will:
 - i) work with local authorities to capture more data to better understand the direct and indirect health impacts associated with noise-related annoyance;
 - ii) work with the Welsh Government to better quantify the health impacts of environmental noise in Wales using population exposure estimates derived from the latest strategic noise maps; and
 - iii) consider the feasibility of environmental public health tracking of noise and health data, for example in relation to educational attainment of children and adolescents or general cardiovascular health outcomes in geographically defined priority areas.
- c) Natural Resources Wales will consider whether there is a case for further rounds of rural tranquil areas mapping and the method to be used in any such mapping.
- d) At the time of writing, the Welsh Government's five-year legislative plan²⁶ includes the *Future Generations (Wales) Bill* (previously the Sustainable Development Bill). Noise policy officials will liaise with the teams taking forward this work as and when appropriate to ensure an ongoing, integrated approach to policy-making.

²⁶ <http://wales.gov.uk/legislation/programme/5yearplan/?lang=en>

2 Noise and new development

2.1 Overview

The planning process seeks to ensure that the right development is built in the right place, in the right way. It allows authorities to prevent or minimise noise exposure from the start. This chapter summarises the overarching national policy framework in relation to noise and new development. Later chapters on noise in agglomerations focus on local development plans and local decision-making, and there lies the greatest opportunity for community engagement and demonstration of commitment to the “involvement” component of sustainable development principles.

2.2 Planning policy

The need to consider noise when planning a new development, be it a noise-generating or a noise-sensitive development, is well covered in Welsh Government guidance, notably *Planning Policy Wales*²⁷ and *Technical Advice Note (TAN) 11: Noise*²⁸.

Box 4: Key points from *Planning Policy Wales*

8.1.5 Development plan strategies and policies need to be consistent and integrated with the strategies and policies contained in regional transport plans, road traffic reduction reports and air quality management plans and information in strategic noise maps.

8.5.7 Great care must be taken to minimise the adverse impacts of new transport infrastructure, or improvements to existing infrastructure, on the natural, historic and built environment and on local communities. Routes should make the best use of existing landforms and other landscape features to reduce noise and visual effects, subject to safety and other environmental considerations. Where no other alternative routes or options are practicable, transport infrastructure schemes should provide mitigation measures to minimise the impacts caused by their construction and operation.

10.3.15 Amusement centres are most appropriately sited in secondary shopping areas or in areas of mixed commercial development. They are unlikely to be acceptable in primary shopping areas, close to housing or near schools, places of worship, hospitals and hotels, nor in conservation areas or other places of special architectural, historic, landscape or natural environment character. Account will always need to be taken of the amount of noise already generated in the area. It will not normally be reasonable to expect amusement centres to be quieter than their neighbours.

²⁷ <http://wales.gov.uk/topics/planning/policy/ppw/?lang=en>

²⁸ <http://wales.gov.uk/topics/planning/policy/tans/tan11/?lang=en>

11.1.11 Formal and informal open green spaces, including parks with significant recreational or amenity value, should be protected from development, particularly in urban areas where they fulfil multiple purposes, not only enhancing the quality of life, but contributing to biodiversity, the conservation of nature and landscape, air quality and the protection of groundwater.

11.3.3 Authorities need to consider the effects of sport and recreation on neighbouring uses in terms of noise, light emissions, traffic generation and, in the case of larger developments, ease of access and the safety of residents, users and the public.

13.13.1 Noise action plans, drawn up by the Welsh Ministers in relation to Wales under the Environmental Noise Directive and its transposing Regulations, aim to prevent and reduce environmental noise where necessary and preserve environmental noise quality where it is good. They are a planning consideration in the use and development of land.

13.14.1 Development plan policies should be designed to ensure, as far as is practicable, that noise-sensitive developments, such as hospitals, schools and housing, that need to be located close to the existing transportation infrastructure to facilitate access, are designed in such a way as to limit noise levels within and around those developments. Such developments should be located away from existing sources of significant noise including air transport and some industrial activities or programmed developments such as improved or new roads. Policies should also be designed to ensure, as far as possible, that potentially noisy developments are located in areas where noise will not be such an important consideration or where its impact can be minimised. Local planning authorities should adopt policies to prevent potentially noisy developments in areas that have remained relatively undisturbed by noise. Development plan policies should have regard to any relevant noise action plan, including the need to protect urban quiet areas against an increase in noise.

13.15.1 Noise can be a material planning consideration, for example in proposals to use or develop land near an existing source of noise or where a proposed new development is likely to generate noise. Local planning authorities should make a careful assessment of likely noise levels and have regard to any relevant noise action plan before determining such planning applications and in some circumstances it will be necessary for a technical noise assessment to be provided by the developer.

13.15.2 Special consideration is required where a noise-generating development is likely to affect a protected species, or is proposed in or near statutorily designated areas, including urban quiet areas designated in noise action plans. The effect of noise on the enjoyment of other areas of landscape, wildlife and historic value should also be taken into account.

Box 5: Key points from *Technical Advice Note (TAN) 11: Noise*

TAN11 provides advice on how the planning system can be used to minimise the adverse impacts of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business.

Local authorities should adopt a corporate approach and ensure close co-operation between planning and environmental health departments when considering noise and noise-generating developments.

Where noise policies apply to the development plan area as a whole, they should be set out in the same way as other general policies. Area-specific noise policies may be useful in some circumstances. Where it is particularly difficult to separate noise-sensitive developments from noisy activities, development plans should contain an indication of any general policies that local planning authorities propose to apply in respect of conditions or planning obligations.

Noise exposure categories have been derived to assist local planning authorities in their consideration of planning applications for residential developments near transport-related noise sources. For example, planning permission should normally be refused where the day/evening average “A-weighted” level for road traffic noise exceeds 72 decibels, or the night-time level exceeds 66 decibels. Where the day/evening average level for road traffic noise is between 63 and 72 decibels, or the night-time level between 57 and 66 decibels, planning permission should not normally be granted, and where it is considered that permission should be given, for example, because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise. Where there is a clear need for new residential development in an already noisy area some or all of the noise exposure categories might be increased by up to 3 decibels above the recommended levels. In other cases, a reduction of up to 3 decibels may be justified.

Local planning authorities must ensure that **noise-generating development** does not cause an unacceptable degree of disturbance. They should also bear in mind that if subsequent intensification or change of use results in greater intrusion, consideration should be given to the use of appropriate conditions.

Local planning authorities should consider whether proposals for new **noise-sensitive development** would be incompatible with existing activities, taking into account the likely level of noise exposure at the time of the application and any increase that may reasonably be expected in the foreseeable future. Such development should not normally be permitted in areas that are, or are expected to become, subject to unacceptably high levels of noise and should

not normally be permitted where high levels of noise will continue throughout the night.

Measures introduced to control the source of, or limit exposure to, noise should be proportionate and reasonable, and may include:

- **engineering:** reduction of noise at point of generation; containment of noise generated; protection of surrounding noise-sensitive buildings;
- **layout:** adequate distance between noise source and noise-sensitive building or area; screening by natural barriers, other buildings or non-critical rooms in a building;
- **administrative:** limiting operating time of noise source; restricting activities allowed on the site; specifying an acceptable noise limit.

Early consultation with the applicant about the possible use of such measures is desirable and may enable them to be incorporated into the design before a proposal is formally submitted for determination. Alternatively, a local planning authority may impose conditions.

There may be circumstances when it is acceptable, or even desirable in order to meet other planning objectives, to allow noise-generating activities on land near or adjoining a noise-sensitive development. In such cases, local planning authorities should consider the use of conditions or planning obligations to safeguard local amenity. Care should be taken to keep the noisiest activities away from the boundary or to take measures to reduce the impact of noise. Authorities should also take into account the fact that the background sound level in some suburban and rural areas is very low, and the introduction of noise-generating activities into such areas may be especially disruptive.

Where an authority's planning objectives cannot be achieved by imposing a planning condition, because, for example, they require the developer to make a financial contribution, or because they relate to developments, roads or buildings other than those covered by the planning application, it may be appropriate to enter into a planning obligation.

The granting of planning permission does not remove the need to comply with additional statutory powers to control noise.

2.3 Best practice in construction

The *Building Regulations*²⁹, which are now devolved in Wales, relate to protection against sound transmission from parts of a building and adjoining buildings, sound within a dwelling house, sound reverberation in common internal parts of buildings containing flats or rooms for residential purposes,

²⁹ <http://www.planningportal.gov.uk/buildingregulations/approveddocuments/parte>

and acoustic conditions in schools. The Robust Details Scheme³⁰ provides accredited standard construction details as an alternative to the pre-completion testing otherwise required under the *Building Regulations*.

The *Building Regulations* relate to sound transmission within the internal areas of buildings. They do not apply to sound transmission from the external environment into the internal areas of buildings. When noise-sensitive buildings such as residential properties are introduced into an area subject to high levels of environmental noise, planning authorities should protect the future occupants by imposing appropriate conditions or obligations on the developer at the planning stage, for example, to avoid placing bedrooms, living rooms and gardens on the exposed side of a property. In many cases, this could lead to a higher value property at little or no extra cost. TAN11 outlines a number of the options available to decision-makers.

Ventilation requirements are an important consideration in the design of buildings, as this can affect the acoustic comfort of the internal occupants. This is particularly relevant to inner city areas where there may be excessive external noise. In these situations the ventilation design may have to be through mechanical rather than natural means.

British Standard BS 8233:1999 gives recommendations for the control of noise in and around buildings, and suggests appropriate criteria and limits for different situations. These are primarily intended to guide the design of new or refurbished buildings undergoing a change of use. The standard covers room acoustics for simple situations, but does not extend to buildings where the acoustics are critical, such as auditoria. BS 8233 is due to be revised in 2013. BS 5228-1:2009 gives best practice recommendations for the basic methods of noise control on building sites. Among the topics that it covers are community relations, the disturbing effects of noise and noise control targets.

Box 6: Synergies and conflicts between acoustic insulation and energy efficiency

Choice of construction method(s) can have a considerable effect on overall acoustic performance. The balance of materials, voids and joints combine in a way that can give a high performance acoustically. Different material types that perform as a composite construction need critical detailing, particularly where there is a requirement for both energy conservation and acoustic performance.

Improving a building's energy efficiency can have the added benefit of reducing noise levels within the property. In particular, double- or triple-glazed windows prevent both heat loss and the transmission of noise from the road outside into bedrooms and living rooms. However, opening the windows in warm weather to ventilate the property may result in a noticeable increase in

³⁰ <http://www.robustdetails.com/>

noise, particularly if left open at night, so in very noisy areas other forms of ventilation may be required, which may have an associated energy cost.

If the residence has a quiet façade, good design will make provision for adequate ventilation through windows on that side of the building rather than on the noise-exposed side, to reduce the need for energy-consuming mechanical ventilation.

Loft and cavity wall insulation whose main purpose is to prevent heat loss may also reduce noise levels within a property, but only in cases where it addresses the main route of sound propagation. Where noise primarily enters a property through windows or from an adjoining property via solid joints (“flanking transmission”) rather than by crossing air gaps, filling those gaps with a sound absorber will bring little if any acoustic benefit.

2.4 Actions and long-term strategy

- a) The Welsh Government will:
 - i) in the short term, issue a clarification letter for TAN11 to highlight factual updates and cross-references to other documents;
 - ii) retain the existing noise exposure categories in TAN11 at least until such time as concepts like the “significant observed adverse effect level”, “lowest observed adverse effect level” and “no observed effect level”³¹ have been sufficiently well developed that they can take their place; and
 - iii) conduct a more substantial review and update of TAN11 when the evidence indicates that this is required.
- b) While the Welsh Government’s legislative programme³² includes the introduction of a Planning Bill³³, this will focus on structures and delivery mechanisms, not planning policy. Opportunities for influencing the planning agenda in relation to noise are, and will continue to be, more prevalent through the policy route.
- c) Once the Department for Education in England has published its revised *Building Bulletin* 93 (BB93), the Welsh Government and the Building Regulations Advisory Committee for Wales will review the relevant sections of the *Building Regulations*. In the meantime, the Welsh Government will consider the implications of the revised acoustic standards for schools introduced in England, on which the revised BB93 is expected to be based.

³¹ These concepts have arisen, in relation to noise, out of the *Noise Policy Statement for England* (<https://www.gov.uk/government/publications/noise-policy-statement-for-england>) and are a subject of ongoing research and development. However, they have yet to be developed to the point at which they can fully replace the noise exposure categories currently in TAN11.

³² <http://wales.gov.uk/legislation/programme/5yearplan/?lang=en>

³³ <http://wales.gov.uk/consultations/planning/draft-planning-wales-bill/?lang=en>

3 Tranquil green space in the built environment

3.1 Overview

Tranquillity means different things to different people, but it is generally understood to refer to an untroubled state, characterised by peace and calm and free from unwanted disturbances. This may refer to either a state of mind or the quality of a particular environment. It can be quantified either in terms of the absence of unwanted intrusions or by a balancing of positive and negative factors.

Excessively high noise levels where human beings are present are a problem to be avoided or addressed regardless of an area's other qualities, but quiet on its own does not make an area good. If a space open to the public is ugly or feels unsafe, then relatively little benefit will be felt from its being quiet.

The benefits of peace and quiet, or a positive soundscape where natural sounds such as flowing water, birdsong, the wind in the trees and human conversation are more prominent than background traffic noise, are often fully realised only when they coincide with visual beauty, a sense of security and ease of access. The presence of nature within towns and cities also provides a welcome contrast to and relief from the built environment.

Areas where these qualities all exist side by side are the areas that should receive the greatest protection from noise intrusion that would risk compromising the place's overall sense of tranquillity.

By similar reasoning, if an area possesses a good soundscape but requires specific improvements in terms of landscape, nature, safety or access before it can act as an effective refuge from traffic noise, then addressing those deficiencies may be just as beneficial in tranquillity terms as seeking to quieten a noisy space.

Box 7: Studies on urban tranquillity

Detailed research on the concept of urban tranquillity was undertaken by Scott Wilson Limited for Westminster City Council in the *Westminster Open Spaces Noise Study 2008*³⁴. In this study, the consultants carried out noise measurements, observations and questionnaires at twenty open spaces and used the results to develop a tranquillity scoring system based on the presence or absence of a wide range of positive and negative features.

The expectations and preferences of residents in Welsh towns and cities are unlikely to be the same as the expectations and preferences of users of open spaces in central London. Nevertheless, some of the key qualitative findings of the Westminster study may be considered universally applicable. In particular, it is recognised that while very high noise levels will tend to result in

³⁴ http://www3.westminster.gov.uk/publications/publications_detail.cfm?ID=3863

a poor overall tranquillity score, at lower noise levels other factors can be at least as important as noise in creating perceptions of urban tranquillity or lack of it. The Westminster study hypothesised and to a certain extent confirmed five “pillars” of urban tranquillity:

- sound;
- presence of nature;
- sense of personal safety;
- culture and freedom of the place; and
- the visual or aesthetic pillar.

An open space that is considered to have merit in all five of these areas, where applicable, may be considered tranquil by urban standards. In Wales, for the purposes of awarding grants for developing tranquil urban green space and designating quiet areas in agglomerations, the Welsh Government adds a mandatory requirement of free daytime access to all local residents.

In September 2010, Environmental Protection UK, commissioned by the City of London Corporation, published a report entitled *Quietening Open Spaces*. In it they presented suggestions as to how existing policy could be used to promote work towards improving tranquillity in city open spaces, together with practical ways in which tranquillity could be enhanced in parallel with other aspects of environmental quality.

The European legislative requirement to identify and protect quiet areas was a central theme in the Environmental Protection UK report, which recognised that local knowledge was needed to make a true assessment of the current and potential utility of any open space. It concluded that overall, in determining whether an area is “quiet” to people using the space, the following findings could be derived from work carried out across Europe:

- Natural rather than mechanical sounds are favoured.
- Visual quality can enhance “quietness” or tranquillity.
- Size as such is immaterial – small spaces in inner cities can have high value in terms of providing respite, opportunity for relaxation and exercise.
- Attitudes to what constitutes quiet are to some extent determined by culture and location.
- The World Health Organization guideline of 55 decibels (A-weighted) has been taken as a starting point for looking at the designation of quiet areas. In dense UK urban areas it would be unrealistic to expect early achievement everywhere, but it has been widely adopted as a longer term aim.
- A substantial part of a space being at least 6 decibels below the typical daytime level of its surroundings might be a practical early guideline.

In March 2011, URS / Scott Wilson produced a report for Defra³⁵ that aimed to identify, quantify and monetise, as far as possible, the benefits that people derive from quiet areas. It found that very little previous research had sought to evaluate the benefits of quiet, taking quiet or relative quiet as a starting point. It concluded that much more effort was needed to ensure that acoustic factors are included on the agenda when considering open space. While quiet does not explicitly feature as one of the most highly ranked attributes of an urban open space amongst its users, the report argued, it is an implicit feature of other benefits that are considered very important, including providing an escape from hustle and bustle and a place for rest and relaxation.

Tranquil indoor environments

Tranquillity in the heart of a busy town or city may also be found in free-to-enter indoor spaces such as museums, libraries and places of worship. The “pillar” of tranquillity relating to the presence of nature does not usually apply in these cases, and may be substituted by one relating to architecture and/or a building’s contents.

3.2 Developing tranquil urban green space

*Technical Advice Note (TAN) 16: Sport, Recreation and Open Space*³⁶ aims to integrate the links between health and wellbeing, sport and recreational activity and sustainable development in Wales through land use planning guidance. It encourages local authorities to carry out open space assessments and develop evidence-based policies and standards that reflect local social, economic, demographic and geographical characteristics.

TAN16 considers the noise impacts of recreational and sporting activities, and recognises that churchyards and cemeteries can provide tranquil green spaces with high levels of amenity, particularly in urban areas.

Natural Resources Wales brings together in a single body the former functions of the Countryside Council for Wales and the Welsh devolved functions of the Environment Agency and the Forestry Commission. The Countryside Council for Wales recommended, prior to the creation of Natural Resources Wales, that no person should live more than 300 metres from their nearest natural green space. This is roughly the equivalent of a six-minute walk, and was adopted as an official target in the Welsh Assembly Government’s 2005 *Strategy for Sport and Physical Activity*³⁷. The Countryside Council of Wales recommended a minimum of 0.25 hectares, and considered that provision should be made for at least 0.25 hectares of

³⁵ <http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=17600>

³⁶ <http://wales.gov.uk/topics/planning/policy/tans/tan16e/?lang=en>

³⁷ <http://wales.gov.uk/topics/cultureandsport/sportandactivercreation/climbing/?lang=en>

accessible natural green space per thousand people following a system of tiers into which sites of different sizes fit as follows:

- Tier 1: no person should live more than 300 metres from their nearest natural green space.
- Tier 2: there should be at least one accessible 20-hectare site within two kilometres of each home.
- Tier 3: there should be at least one accessible 100-hectare site within five kilometres of each home.
- Tier 4: there should be at least one accessible 500-hectare site within ten kilometres of each home.

The majority of Welsh local authorities have mapped the natural green spaces accessible to residents of their towns and cities and assessed the provision of green space against standards advocated by the Countryside Council for Wales. This helps them to identify areas that are deficient in green space or where existing green space is of insufficient quality and plan remedial action. As mapping technology has improved since these assessments were first conducted, Natural Resources Wales will now continue the mapping of urban green spaces across Wales and provide this data to local authorities to help them bring their existing green space inventories up to date. This will in turn help local authorities keep an up-to-date overview of the need and opportunities for green space provision.

In 2012/13 and 2013/14 the Minister for Environment and Sustainable Development has made £500,000 available each year for a new grant scheme for projects led by local authorities to improve air quality, environmental noise and provision of tranquil urban green space in Wales, focusing in particular on benefits to poorer communities. Grants were awarded to 28 projects in 2012/13 and 2013/14, 24 of which were primarily tranquil urban green space initiatives:

- Ebbw Vale Festival Park, Blaenau Gwent County Borough Council
- Six Bells Renewal Area, Blaenau Gwent County Borough Council
- Maesteg Welfare Park, Bridgend County Borough Council
- Aberbargoed Grasslands National Nature Reserve, Caerphilly County Borough Council
- Energlyn Pocket Park, Caerphilly County Borough Council
- Navigation Colliery, Crumlin, Caerphilly County Borough Council
- Heath Park Sensory Garden Trail, Cardiff Council
- Eirias Park, Colwyn Bay, Conwy County Borough Council
- Green Infrastructure in Rhyl, Denbighshire County Council
- Rhyl Cut Wildlife Corridor, Denbighshire County Council
- Wepre Park, Flintshire County Council
- Abergavenny Town Centre, Monmouthshire County Council
- Warren Slade and Park Redding Wood, Chepstow, Monmouthshire County Council
- Neath Canal, Neath Port Talbot County Borough Council
- Glebelands Park, Newport City Council

Figure 1 **Creating the Rhyl Cut Wildlife Corridor, a pleasant, tranquil route taking pedestrians and cyclists away from noisy roads (photographs by G2G Communities CIC)**



Figure 2 **Maesteg Welfare Park before and after installing boardwalks and paths to improve access to tranquil green areas**



- Bryn-Melyn Park, City and County of Swansea
- Park Llewelyn, City and County of Swansea
- Swansea Bay Wildlife Corridor, City and County of Swansea
- Vetch Community Green Space, City and County of Swansea
- Snatchwood Road Greenway, Torfaen County Borough Council
- Caldý Close Open Space, Barry, Vale of Glamorgan Council
- Coronation Street Green Space, Barry, Vale of Glamorgan Council
- Caia Park, Wrexham County Borough Council
- Solway Banks, Wrexham County Borough Council

The 2011 *Programme for Government*³⁸ includes a commitment to build on the existing “Tidy Towns” grant scheme (which already covers things like litter and graffiti) and develop an integrated local environment improvement package for communities, drawing together all of the Welsh Government’s programmes and supporting the wider anti-poverty and regeneration agenda.

3.3 Celebrating tranquil urban green space

The information in this section has been provided by Natural Resources Wales.

The objective of the **Green Flag Award** scheme³⁹ is to encourage the provision of good quality public parks and green spaces that are managed in environmentally sustainable ways. The Green Flag Award helps to create public recognition of good quality green spaces and in doing so aims to rebuild people’s confidence in them. The Award aspires to raise expectations of what a public green space can offer and reassure people that the high regard they have for their public parks and green spaces is justified. The Award acts like an MOT test for a green space: it does not specify what features should be present, but assesses all features present to ensure that the site is fit for purpose.

The Green Flag Award may be applied for by any corporate body or public institution for any freely accessible public open space. The Green Flag Community Award, as its name suggests, is for any freely accessible public open space that is managed by a community or voluntary group. Both Awards are judged to the same criteria: only the requirements for a management plan differ between them. A visitor to an Award-winning site should expect the same quality of experience whether the site holds a Green Flag or a Green Flag Community Award.

The criteria by which a site will be judged for a Green Flag Award are grouped under eight main headings that together make for a comprehensive definition of what a good green space might be. They outline the standards that a Green

³⁸ <http://wales.gov.uk/about/programmeforgov/?lang=en>

³⁹ <http://greenflag.keepbritaintidy.org/>

Flag site must achieve and they set targets for improvement. The headings define:

- how to create a sense that people are positively welcomed into a green space;
- how best to ensure that the site is a safe and healthy environment;
- what people can expect to find in the way of standards of cleanliness, facilities and maintenance;
- how a green space can be managed in environmentally sensitive ways;
- the value of conservation and care of historic heritage;
- ways of encouraging community involvement;
- methods of promoting or marketing a site; and
- how to reflect all the above in a coherent and accessible management plan, statement or strategy.

Award-winning sites are not required to reach a specified level of tranquillity, but by their very nature properly managed green spaces will help people to relax and therefore begin to combat the effects of noise-induced stress. However, a site will be more likely to win an Award if it can demonstrate that specific provision has been made for people to enjoy tranquillity.

It is important to ensure that there are places for quiet contemplation, and it is recommended that seating is provided in quieter parts of the site where there are views to enjoy (see sections 1.4 and 6.4 of *Raising the Standard. The Green Flag Award Guidance Manual*⁴⁰).

Parks and recreation areas can be a source of noise from users enjoying the site and the judging criteria include detailed notes on assessing this noise to ensure that it does not become a source of complaint by neighbours (*Raising the Standard*, section 2.1). Noise is also generated from site management operations, and Award-winning sites are required to keep noise generated by vehicles and machinery to a minimum through the use of mufflers and properly maintained vehicles and machinery (*Raising the Standard*, section 4.8).

The most important contribution that a Green Flag Award-winning site will make to tranquillity, even if it is subject to noise, is in providing a green space that helps reduce users' perceptions of noise. Often the sound of flowing water, or wind in the leaves of trees and shrubs will mask artificial noises from off-site, thereby offering respite to visitors. Evidence suggests that views of green space begin to measurably reduce the clinical signs of stress within three minutes, so the health effects of even a short exposure to, for example, an urban pocket park may be significant (*Stress recovery during exposure to natural and urban environments*, Ulrich *et al.*, 1991). The presence of a Green Flag shows potential users that the site is safe, welcoming and well-maintained, thereby encouraging them to use rather than avoid the site, and thus increasing their chances of receiving these health benefits.

⁴⁰ <http://greenflag.keepbritain tidy.org/about-us/about-green-flag-award/guidance-manual/>

Trees

Trees bring multiple benefits to the built environment, including reducing the urban heat island effect and absorbing air pollution. They have only a limited ability to absorb or scatter noise, but much more significant is their ability to reduce the perception of noise by hiding the noise source from sight and making a place feel more tranquil, both visually and by introducing natural sounds to soften an otherwise purely mechanical soundscape. When the trees are bare in winter these effects are lessened, but at this time of year people are less likely to be outside or to have their windows open. The Trees and Design Action Group⁴¹, CIRIA⁴² and the European HOSANNA project⁴³ have produced guides to help maximise the benefits brought by urban trees and other forms of vegetation.

3.4 Protecting tranquil urban green space

The Welsh Government published a procedure for designating **quiet areas in agglomerations** for the purpose of the Environmental Noise Directive (“the Directive”) and its transposing Regulations (“the Regulations”) in May 2011. The Directive requires that noise action plans for agglomerations aim to protect quiet areas against an increase in noise. In Wales this is achieved through paragraphs 13.14.1 and 13.15.2 of *Planning Policy Wales*⁴⁴. These require development plan policies to have regard to the need to protect urban quiet areas against an increase in noise and special consideration to be given where a noise-generating development is likely to affect a designated urban quiet area.

The Directive and the Regulations only provide for the designation and protection of such areas within the three agglomerations in Wales with populations exceeding 100,000 people. However, *Planning Policy Wales* also states that formal and informal open green spaces, including parks with significant recreational or amenity value, should be protected from development, particularly in urban areas where they fulfil multiple purposes, and this policy applies across the whole of Wales. The consideration given to designating a tranquil urban green space in an agglomeration as a quiet area nevertheless serves an important purpose, raising awareness among the public and decision-makers of the value of tranquil places in Welsh towns and cities, and the significance of noise and soundscape more generally.

The Welsh Government has consulted on the candidate quiet areas nominated by local authorities in agglomerations that met the criteria laid down in the 2011 procedure and that were freely accessible in daylight hours to local residents. Details of the designated quiet areas in the Welsh agglomerations are found in Chapters 9-11.

⁴¹ <http://www.tdag.org.uk/trees-in-the-townscape.html>

⁴² <http://www.ciria.org/>

⁴³ <http://www.greener-cities.eu/>

⁴⁴ <http://wales.gov.uk/topics/planning/policy/ppw/?lang=en>

Any further nominations of candidate quiet areas in the three agglomerations will be considered by the Welsh Ministers on a case-by-case basis.

The recent Home Office proposals for a new *Anti-social Behaviour, Crime and Policing Bill*⁴⁵ include a provision to introduce a **public spaces protection order**. This would be a locally determined order that could impose controls on behaviour in public places, for example putting in place restrictions to address a range of antisocial behaviour issues in public places and prevent future problems which would detract from those areas identified as tranquil green spaces.

Sound generated within a tranquil urban green space

The designation of a quiet area in a Welsh agglomeration should not be interpreted in such a way as to prevent sound-generating activities within the space itself that benefit the users of the space. For example, the designation should not be used to prevent outdoor musical events or improvements to parking facilities where these increase the value of the space to its users. Note, however, that paragraph 11.3.3 of *Planning Policy Wales* does assert that authorities need to consider the effects of sport and recreation on neighbouring uses in terms of noise. If such activities came to mean that a tranquil environment no longer existed within a quiet area, its designation as such should be revoked⁴⁶ and tranquil green space provision be secured elsewhere to serve the needs of local residents.

3.5 Actions and long-term strategy

- a) Local planning authorities, by having regard to the relevant provisions in Welsh planning policy, will aim to protect designated quiet areas in agglomerations and other highly valued tranquil urban green spaces across Wales from an unacceptable increase in noise levels arising from transport and industry.
- b) Natural Resources Wales will continue the work of the Countryside Council for Wales, mapping urban green spaces across Wales and providing this data to local authorities to help them bring their existing green space inventories up to date. In particular, Natural Resources Wales will disseminate a new geographic information system (GIS) data set to local authorities by the end of 2013 that will show potentially accessible natural green space across Wales according to the former Countryside Council for Wales criteria. This will enable local authorities to bring their own green space assessments across onto a modern

⁴⁵ <http://services.parliament.uk/bills/2013-14/antisocialbehaviourcrimeandpolicingbill.html>

⁴⁶ The Welsh Ministers may instate or revoke quiet area designations at any time by amending the current noise action plan following receipt of pertinent information and will, as a matter of course, review all designated quiet areas where Green Flag status has not been achieved within five years of their date of designation.

base map that will be easier for them to update. Natural Resources Wales will assist local authorities in keeping this data set up to date as land use changes.

- c) The Welsh Government, in developing an integrated local environment improvement package for communities, will, where appropriate, continue to offer grants to local authorities for tranquil urban green space improvement projects, particularly in deprived areas.
- d) The Welsh Government, in consultation with Natural Resources Wales and local authorities in agglomerations, will review each quiet area that has failed to achieve Green Flag status no later than five years after its designation as a quiet area, to determine whether it still warrants that designation or should have it revoked.
- e) Natural Resources Wales will continue to work with the Green Flag sub-licence holder for Wales, Keep Wales Tidy, to ensure that judges trained in Wales have a proper understanding of tranquillity as it relates to the Green Flag Awards.
- f) At the time of writing, the Welsh Government's five-year legislative plan⁴⁷ includes the *Environment (Wales) Bill*⁴⁸, which will provide for a more integrated management of the environment in Wales. Noise policy officials will liaise with the teams taking forward this work as and when appropriate to ensure an ongoing, integrated approach to policy-making.

⁴⁷ <http://wales.gov.uk/legislation/programme/5yearplan/?lang=en>

⁴⁸ <http://wales.gov.uk/consultations/environmentandcountryside/environment-bill-white-paper/?lang=en>

4 Road noise management

4.1 Overview

The best way to deal with unacceptable levels of road traffic noise is to prevent them from occurring in the first place through good planning, while at the same time recognising the essential social and economic functions of the road network. When residential properties are built, noise to which occupants will be exposed should be kept to acceptable levels, and when road layouts are to be changed, *Welsh Transport Planning and Appraisal Guidance*⁴⁹ and the *Noise Insulation Regulations 1975* are there to ensure that affected properties are suitably protected from the resultant increase in noise.

Stricter European legislation limiting the sound levels of new motor vehicles (currently under review) and tyres⁵⁰ at the point of sale can make a major contribution to keeping noise levels down in the longer term, as can a gradual modal shift to electric vehicles, the further development of low noise road surfaces and tyres, and (where appropriate) reductions in the speed limit. When proposing residential developments near existing noise sources such as busy roads, appropriate mitigation, such as adequate noise insulation or appropriate internal design to keep living areas away from the most exposed building façades, will also help to keep levels of population exposure down. However, noise levels to which people are subject can increase over time as a result of increased road use, degradation of the road surface, removal of screening objects and deterioration in driver behaviour.

Mitigating noise issues after they have arisen can be a lot more expensive than avoiding them in the first place. It is therefore desirable to seek interventions that bring multiple benefits, such as reducing people's exposure to air pollutants, making buildings more energy-efficient, encouraging safer driving or improving the road surface for drivers and cyclists at the same time as decreasing noise levels. It is also crucial that any intervention be properly targeted. On a road where traffic is slow-moving and revving of engines is the main form of noise, acting to reduce noise from the tyres on the road surface will result in little if any noticeable improvement, whilst at higher speeds tyre and aerodynamic noise may be dominant and reductions in engine noise of limited benefit.

When noise maps, complaints records or local knowledge yield large numbers of **priority areas** (places where residences and other sensitive locations exceed a certain decibel threshold or other qualifying benchmark), a further round of prioritisation may be necessary to decide which are in greatest need of action in the short term. A range of prioritisation criteria could conceivably be applied at this stage by the responsible authorities that may or may not include factors such as (but not limited to) levels of deprivation, numbers of distinct, validated complaints received, known air quality issues or the highest noise levels experienced within each priority area.

⁴⁹ <http://new.wales.gov.uk/topics/transport/publications/weltag/?lang=en>

⁵⁰ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009R1222:EN:NOT>

Figure 3 Major roads in north Wales included in the 2012 noise mapping



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

4.2 Who is responsible?

Roads in Wales fall into two categories – motorways and trunk roads, which are the responsibility of the Welsh Government, and all other public roads, which are managed by local authorities. Each local authority is accountable to its council tax payers and must identify for itself the appropriate level of resource and the most appropriate strategy for managing noise from the roads for which it is responsible. The Welsh Government will do what it can to assist, within reason, by making the data derived from the noise maps available in a form that is helpful to the responsible authorities, sharing the latest best practice, offering loans for road improvements under its Local Government Borrowing Initiative and continuing to invite local authorities to apply for grants to trial innovative noise and air quality interventions, particularly where they benefit poorer communities and are linked to multiple benefits.

Road users are also responsible for the way in which they drive. Unnecessary rapid acceleration, particularly in residential areas, exposes people in nearby buildings or open areas to noise that could otherwise be avoided, and can also be dangerous. In general, driving safely, driving quietly and driving in a fuel-efficient manner amount to much the same thing.

Figure 4 Major roads in south Wales included in the 2012 noise mapping



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

4.3 The noise maps

The residential population data used to generate the exposure figures in Tables 1 and 2 from the 2012 noise maps came from the 2011 census. The residential population data used to generate the exposure figures in the previous round of action plans came from the 2001 census. For this reason, and because more accurate traffic flow data has been sourced from Traffic Wales and local authorities this time around, it is not valid to look at the change in noise exposure reported from one round of noise mapping to the next as if it represented the actual change in noise exposure over a five-year period.

Table 1 Population exposure using the day-evening-night noise indicator L_{den}

Noise source	Number of people exposed to these noise levels				
	55-59 dB	60-64 dB	65-69 dB	70-74 dB	> 75 dB
Major roads	232,500	113,900	76,300	44,600	4,000
All mapped roads	275,400	164,200	129,000	50,300	4,000

Table 2 Population exposure using the night-time noise indicator
 L_{night}

Noise source	Number of people exposed to these noise levels				
	50-54 dB	55-59 dB	60-64 dB	65-69 dB	> 70 dB
Major roads	160,600	86,900	54,800	5,100	1,400
All mapped roads	204,600	147,700	63,100	5,200	1,400

4.4 Priority areas

In implementing the 2009 environmental noise action plans, the top 1% of residential properties experiencing noise levels above 50 decibels (using an “ $L_{A10,18h}$ ” indicator) according to the 2007 road traffic noise maps were identified as **candidate noise action planning priority areas**⁵¹. Following further investigation and advice from the trunk road agencies and local authorities, the Minister for Environment and Sustainable Development formally designated 171 **noise action planning priority areas** for road traffic noise in Wales. They are shown in Figures 5 to 9.

Figure 5 Priority areas in south-west Wales based on the 2007 noise maps



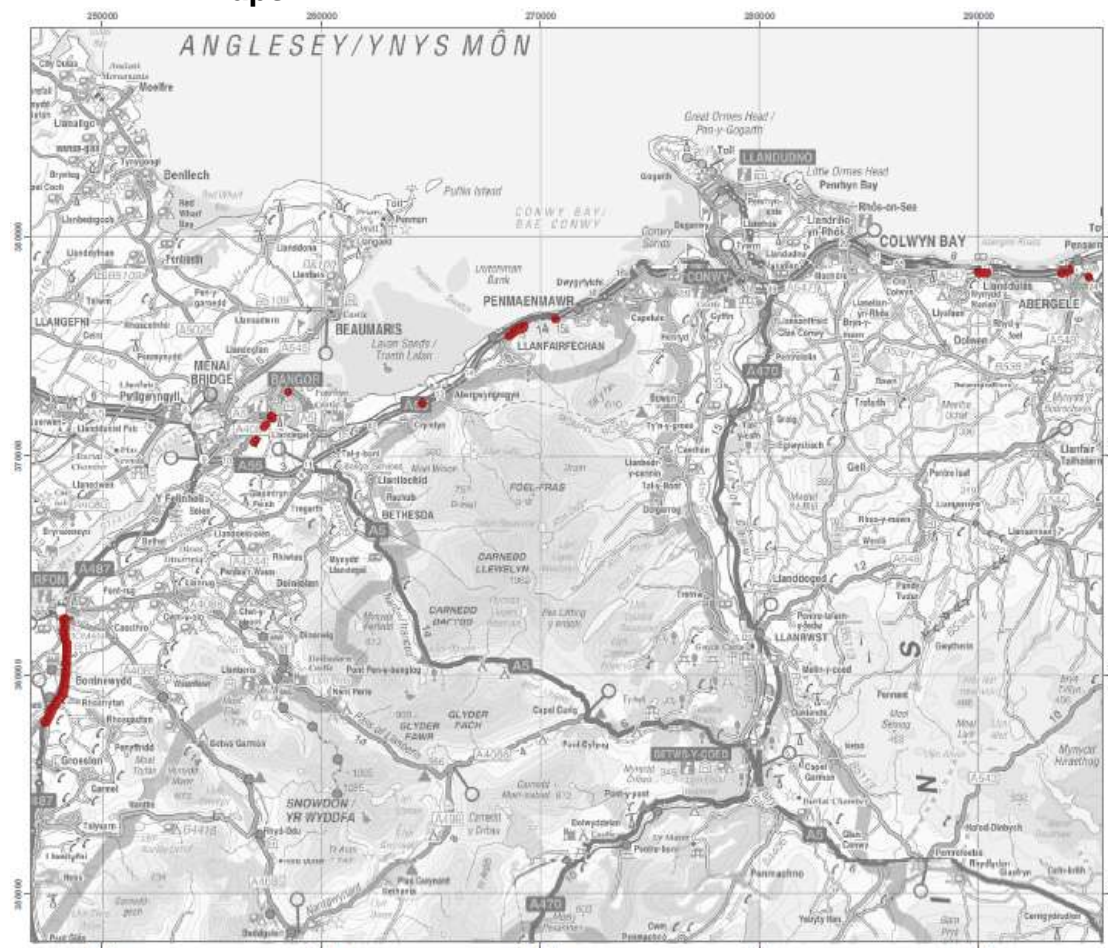
© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

The priority areas based on the 2007 noise maps are being reviewed in light of the 2012 maps and any mitigation works or investigations of options that have taken place since. New priority areas may be designated on roads included in noise maps for the first time in 2012, and on roads where the 2012

⁵¹ It was decided to focus upon locations where the top 1% of all the people predicted to be exposed to an $L_{A10,18h}$ of 50 dB or greater reside, according to the results of the noise mapping, and the $L_{A10,18h}$ is at least 68 dB. Here $L_{A10,18h}$ is the arithmetic mean of the A-weighted sound pressure levels exceeded for 10% of each hour over the period 06:00-24:00, averaged over all such periods in a year, calculated at a height of 4 metres on a 10-metre receptor grid and excluding the sound reflected from the building façade of the residence in question. The maximum value is taken from all the receptor grid points immediately surrounding the residence in question. When applied to the 2007 noise maps, the top 1% criterion roughly equates to those properties where $L_{A10,18h}$ exceeds 74 dB. For roads other than motorways, on the noise maps this corresponds to an L_{den} of roughly 73 dB. For motorways, it corresponds to an L_{den} of roughly 76 dB. It is therefore proposed to identify candidate priority areas from the 2012 noise maps using an initial screening criterion of an L_{den} of 73 dB.

maps show higher noise levels than the 2007 maps. Additional hotspots based on other sources of intelligence could in principle also be designated, where they have been properly investigated and validated, and where cost-benefit analyses and proportionality suggest interventions may be justified.

Figure 6 Priority areas in north-west Wales based on the 2007 noise maps

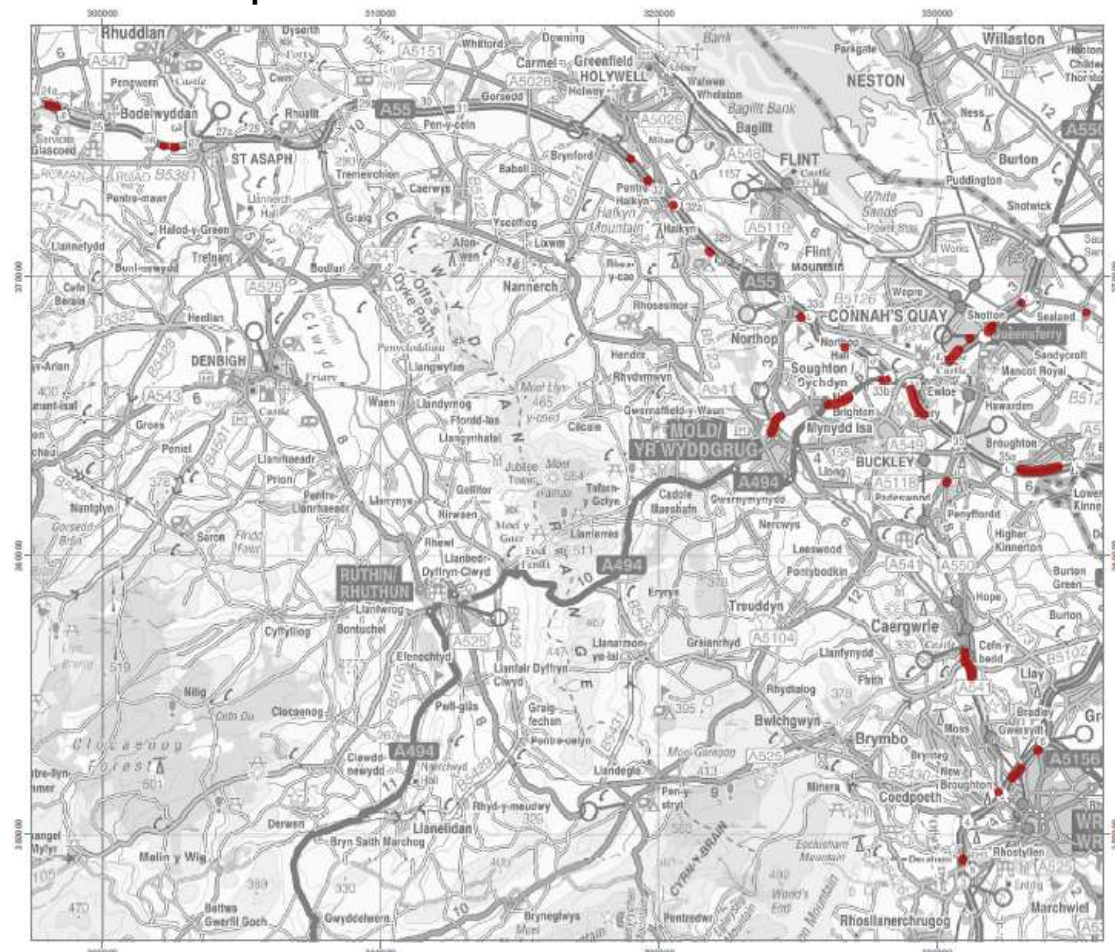


© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

4.5 Motorways and trunk roads

Prior to any work being done in response to the Environmental Noise Directive, the criteria for addressing residential noise disturbance associated with motorways and trunk roads in Wales were set out in the summary report of a noise mitigation study carried out by Parsons Brinckerhoff for the National Assembly for Wales in 2002. This report identified a number of potential mitigation schemes, and the programme for delivery of those schemes has been underway for some time. Work at the sites in south Wales identified in the report was agreed following a public consultation and has now been completed. The remainder of the schemes are located in north Wales and will be considered in greater detail over the next few years, with those schemes that are proven to qualify for noise mitigation measures being progressed for construction as soon as funding can be agreed.

Figure 7 Priority areas in north-east Wales based on the 2007 noise maps

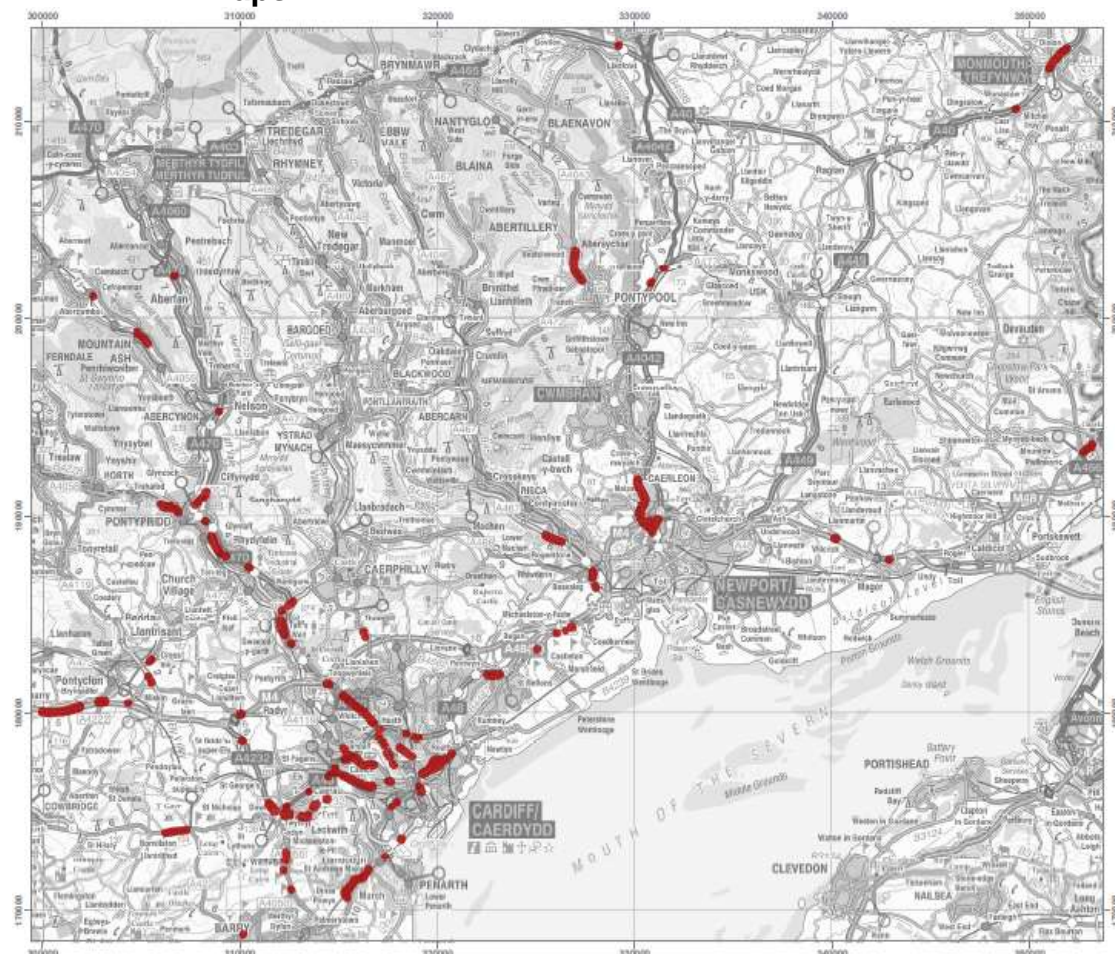


© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

Table 3 Sites where work has been completed

Route	Scheme	Type
A40	Dixon	Low noise surfacing
A483	Wrexham bypass (north)	Low noise surfacing
A55	Hawarden bypass (east)	Low noise surfacing
A40	Monmouth	Low noise surfacing
M4	Junction 44 to Junction 45	Low noise surfacing
A483	Ruabon bypass (north and south)	Low noise surfacing
A465	M4 Junction 43 to Neath	Low noise surfacing
A55	East of Abergele	Low noise surfacing
M4	Junction 39 to Junction 40	Low noise surfacing
M4	Junction 36 to Junction 37	Low noise surfacing
M4	Junction 26 to Junction 27	Noise barrier
M4	Junction 25 to Junction 26	Noise barrier
A470	North of Nantgarw	Noise barrier
M4	Junction 24 to Junction 25	Noise barrier
M4	Junction 27 to Junction 28	Noise barrier

Figure 8 Priority areas in south-east Wales based on the 2007 noise maps



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

Noise reduction has been achieved through the installation of low noise surfacing or noise barriers located adjacent to the road within the highway boundary. At a number of sites, both treatments have been employed. Priority areas on the trunk road network that are identified based on analysis of the 2007 and 2012 noise maps and the consideration of any supplementary sources of information will be ranked to enable the development of a delivery programme for future years.

The trunk road agencies

The Welsh Ministers' functions for the operation, maintenance and improvement of the motorway and trunk road network in Wales are delegated to two trunk road agencies. See their websites^{52 53} for further information.

⁵² <http://www.nmwtra.org.uk/index.php?id=412&L=0>
⁵³ <http://www.swtra.co.uk/homepage.htm>

Box 8: Concrete trunk roads

Road traffic noise is highly dependent on the nature of the road surface, particularly at high speeds, and concrete is the noisiest surface to be found nowadays on the Welsh trunk road network. There are three stretches of concrete trunk road remaining in Wales:

- the A465 between the Aberdulais interchange and Cwmgwrach roundabout;
- the A40 between Raglan and Abergavenny; and
- the A4232 between Culverhouse Cross and Junction 33 of the M4.

In 2013 the South Wales Trunk Road Agent commissioned noise assessments for all three remaining stretches of concrete trunk road. The measurements taken showed elevated noise levels along all three roads. In addition, the 2012 noise mapping has flagged parts of the concrete A465 and A4232 as candidate priority areas, and fourteen responses to the consultation on this plan concerned excessive noise from the concrete A40, including from residents of three different villages and the managing director of a residential home. All fourteen strongly advocated an improved road surface.

In light of the consultation responses and the measurements taken, all the residential properties situated along the three concrete stretches of trunk road will be listed as priority areas under this action plan. The timing of any resurfacing will be dependent on the budgets available to the Welsh Government for carrying out such work.

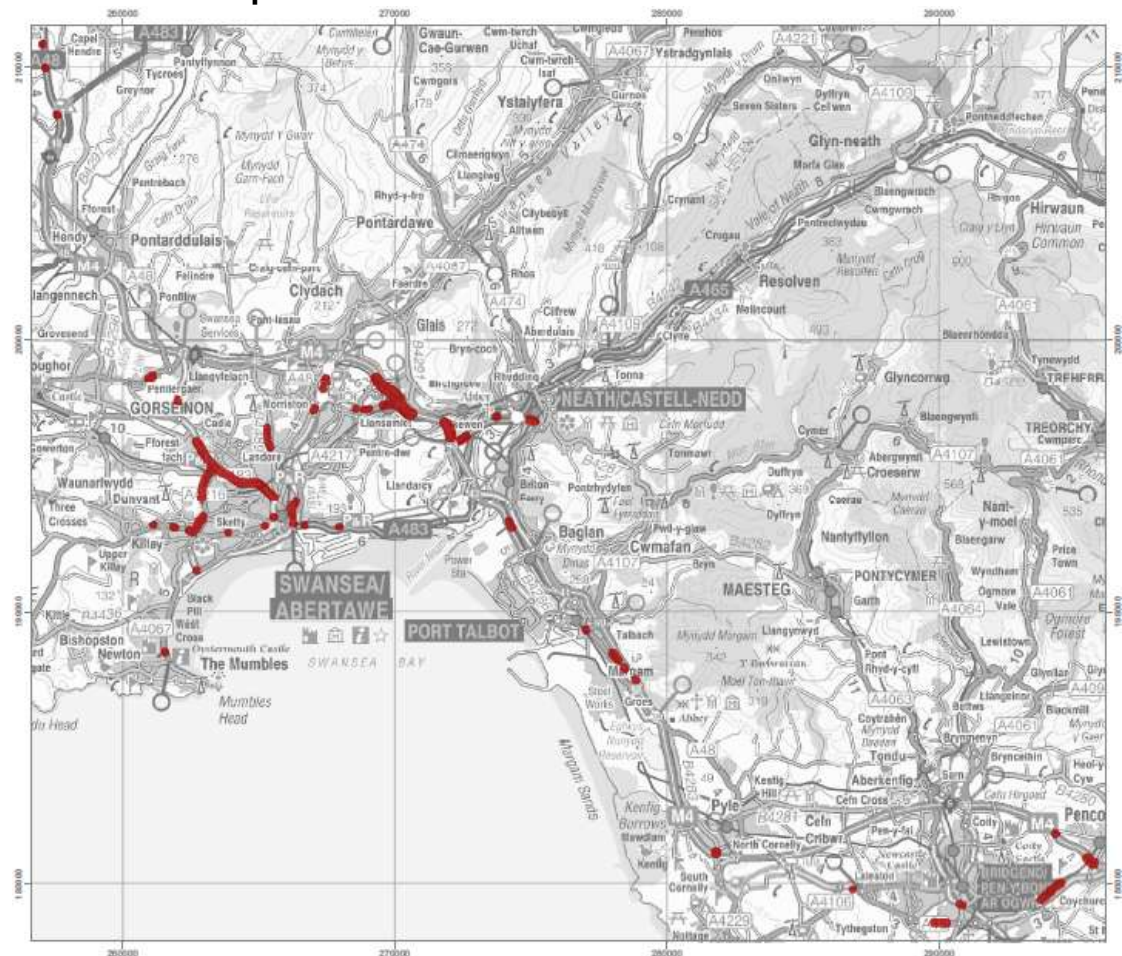
4.6 Local authority roads

In May 2012 the Welsh Government made £4 million available to local authorities in the first tranche of its three-year Local Government Borrowing Initiative. This will allow councils in Wales to address pressures on road maintenance budgets and boost investment in local highway improvement schemes. Restoring the surfaces of local authority roads will make them not only safer for motorists and cyclists, but also quieter for residents.

Individuals particularly sensitive to daytime noise

The potential for disturbing residents through excessive noise from road vehicles is greatest at night when most are trying to sleep. However, certain groups of people such as shift workers who carry out important work at night, or newborn babies, need to sleep during daylight hours. Considerate behaviour by drivers, for example in refraining from unnecessary revving of engines or sounding of horns in residential areas, takes the needs of such people into account.

Figure 9 Priority areas in mid-south Wales based on the 2007 noise maps



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

The Welsh Government has also made £500,000 available to local authorities each year in 2012/13 and 2013/14 under a new grant scheme for projects to improve air quality, environmental noise and the provision of tranquil urban green space, focusing in particular on benefits to poorer communities. Merthyr Tydfil County Borough Council took advantage of this scheme in its first year to obtain funding for traffic calming measures on Twynyrodyn Road to reduce both air pollution and noise levels experienced by members of the public.

In responding to the consultation on this noise action plan, the Noise Abatement Society welcomed the aims of the improvements illustrated in Figure 10, but queried “whether, for future road calming schemes, sinusoidally-profiled road humps or other measures such as cameras might be capable of reducing traffic speeds with less risk of vehicle noise over the hump itself”.

Figure 10 Traffic calming measures including pavement widening on Twynirodyn Road, Merthyr Tydfil, to modify the flow of traffic and improve driver behaviour, with air quality monitor circled and original pavement line marked in red



4.7 Traffic noise and air quality

In 2012 the Minister for Environment and Sustainable Development issued an addendum under Part IV of the Environment Act 1995 to the statutory *Local Air Quality Management Policy Guidance for Wales*, specifically in relation to air quality and traffic noise⁵⁴. It observed that the purpose of local air quality management was to improve health and quality of life, and that this was also the purpose of traffic noise management.

Air pollution and noise are often emitted from the same sources, notably road traffic, and locations of poor air quality often coincide or overlap with locations subject to high noise levels. (At the time of writing, all but one of the air quality management areas that have been declared by Welsh local authorities on roads covered by the 2007 noise maps are in the vicinity of designated road traffic noise action planning priority areas.) And even where they do not coincide, poor air quality at one location and high levels of noise at a neighbouring location may be related to one another through the way in which traffic is managed in the wider area. In aiming for the most beneficial outcome for members of the public, it is important to seek measures that are proportionate and cost-effective to both improve air quality and reduce noise levels, and avoid measures that worsen one while seeking to improve the other.

⁵⁴

<http://new.wales.gov.uk/topics/environmentcountryside/epq/airqualitypollution/airquality/guidance/laqmpg09add/?lang=en>

Box 9: Key points from policy guidance relating to air quality and traffic noise

Air quality action plans prepared by local authorities must include evidence that all available options have been considered on the grounds of cost-effectiveness and feasibility. Cost-beneficial measures should be given priority, though there will be times when cost-effective measures are required to work towards meeting air quality objectives.

Wherever air quality action plans prioritise measures in terms of costs and benefits, traffic noise should receive due consideration, qualitatively if not quantitatively. Special consideration should be given to priority areas and any other areas where a local authority considers traffic noise to be a matter of concern, where these may be subject to changes in traffic noise levels as a result of air quality management measures. This effect may not be local, for example if diverting traffic away from a location with poor air quality increases noise levels somewhere else. In drawing up an air quality action plan, the local authority should keep a view of the wider road network in mind at all times.

Local authorities must make a judgement in each case as to whether the impacts of air quality action plan measures on traffic noise need to be quantified or whether they can be treated qualitatively when prioritising measures. The noise assessment should reflect local circumstances and should not be disproportionate to the scale of changes proposed.

The report *Determination of the potential synergies and conflicts between noise and air quality action plans* produced by WS Atkins in 2001 provides a useful overview of the subject. It identifies a wide range of local mitigation measures, many of which can be implemented by local authorities. It may be used as a guide provided that the user allows for changes that have taken place (such as to road vehicles) in the years since its publication, and realises that local circumstances must be treated as paramount when seeking the optimal suite of measures.

Some measures, particularly those concerned with reducing local traffic flows, may benefit both air quality and noise, though in some cases this may only hold true where speeds are not permitted to increase as a consequence. Other potential measures that can reduce both air pollution and noise include restrictions on heavy vehicles, reducing speeds on motorways and dual carriageways, and strategies to increase the separation between the source and sensitive receptors, such as by building a bypass. However, measures to reduce average speeds of traffic in urban areas, whilst generally benefiting noise, may increase air pollutant emissions. In certain cases detailed computer models may be required to determine the optimal public health outcome for a locality. The level of detail sought should sensibly reflect the scale of the changes proposed.

Containment of air pollution and noise through the use of tunnels, cuttings or barriers may worsen air quality for road users, including cyclists. The health of road users should not be ignored when weighing up options.

4.8 Traffic noise and road safety

In July 2013, Edwina Hart AM, Minister for Economy, Science and Transport, published a *Road Safety Framework for Wales*⁵⁵ which sets out the Welsh Government's priorities for road safety until 2020. The primary concern of road safety policies is the prevention of death and serious injury on the Welsh road network. However, some of these policies can also bring noise reduction benefits, primarily through engineering measures.

The Welsh Government provides significant amounts of funding to local authorities to implement traffic calming measures such as speed bumps, kerb extensions and shared space, which have the effect of reducing speed and, as a consequence, the noise of vehicles. There are approximately 560 20 mph speed limits and zones in Wales, many of which have been funded by the Welsh Government. The Welsh Government expects partners to consider introducing 20 mph schemes where there is evidence to support them.

The Welsh Government is currently undertaking a review of all speed limits on the trunk road network to ensure that they are appropriate, and recommends that all local authorities do the same on their A and B roads by 2014.

The Welsh Government expects partners to enforce the law in respect of speed limits, particularly at locations where excessive speed is commonplace and there is a history of road casualties.

4.9 Noisy vehicles

Certain vehicles cause levels of annoyance disproportionate to their actual contribution to the daily average noise levels shown on noise maps. In particular, motorcycle noise has a character that makes it stand out from other traffic noise, and this is exacerbated by owners who deliberately modify their exhaust systems to remove or reduce the effectiveness of the silencer.

The *Motor Cycle Noise Act 1987*⁵⁶ states that it is not permissible to supply an exhaust system unless certain requirements are met. These are set out in the *Motor Cycle Silencer and Exhaust Systems Regulations 1995*⁵⁷, which broadly state that the correct silencer must be used for each particular engine. However, this doesn't prevent users from making their own modifications.

In the MOT test it is a requirement that inspectors assess subjectively the effectiveness of the silencer in reducing the exhaust noise emitted as far as is

⁵⁵ <http://wales.gov.uk/topics/transport/roads/safety/road-safety-framework/?lang=en>

⁵⁶ <http://www.legislation.gov.uk/ukpga/1987/34>

⁵⁷ <http://www.legislation.gov.uk/uksi/1995/2370>

reasonable. Unfortunately, it has not yet been possible to devise a robust, consistent methodology for an objective test as part of the MOT.

For motorcycles using the public highway, the primary power to act on noise lies with the police since it is an offence under the *Road Vehicles (Construction and Use) Regulations 1986*⁵⁸ for a vehicle to be “used on a road in such manner as to cause any excessive noise which could have been avoided by the exercise of reasonable care on the part of the driver”. Action might then be taken either under these powers or under the *Motor Cycle Silencer and Exhaust System Regulations*.

In local authorities such as Caerphilly and Torfaen, complaints have been linked to cars with oversized exhausts misusing roads for racing purposes. Here again, the *Road Vehicles (Construction and Use) Regulations* would apply. Noise issues can also arise around legitimate race circuits and measures can be put in place to try to avoid such problems. Anglesey Circuit⁵⁹ has a planning consent that requires the operator to implement a noise control and management system. Isle of Anglesey County Council has encouraged the circuit operator to produce a noise diary⁶⁰ and assisted the local community council in setting up a liaison group with the circuit.

There are four police forces in Wales, and they have provided the information in Box 10 on the subject of noisy motorcycles. Many local authorities possess noise monitoring equipment that enables them to deploy with police where appropriate to target noisy vehicles.

Box 10: The role of the police

In the thirteen months up to and including October 2012, **Dyfed-Powys Police** recorded 441 unique nuisance calls with the keywords “motorbike”, “motorcycle” or “scrambler” (a type of all-terrain motorcycle). Only four of these related specifically to noise, compared with 434 concerning off-road issues such as scramblers in parks and national parks. The Dyfed-Powys Roads Policing Unit runs “Operation Darwen” with a focus on reducing the impact of antisocial riding of motorcycles within its area, and also runs quarterly operations with national parks and volunteer agencies (“Operation Rover”) to address issues around off-road driving and riding.

Gwent Police has received complaints about noisy motorcycles from people living in rural communities in Monmouthshire in recent years. To address this issue, the Roads Policing Unit has targeted the areas in question, mainly on weekends, with a combination of enforcement and education initiatives in respect of motorcycle speed and manner of riding. The issue remains a “Partnerships and Communities Together” priority for local policing units.

⁵⁸ <http://www.legislation.gov.uk/ukxi/1986/1078>

⁵⁹ <http://www.anglesey.gov.uk/planning-and-waste/environmental-health/pollution/noise-control/motor-sports/>

⁶⁰ <http://www.angleseycircuit.com/information/noise-diary/2013>

The Roads Policing Unit of **North Wales Police** often comes across motorcycles fitted with “after market” exhausts. Many of these are stamped “Not for road use” or have no “E” mark to show that they are legally compliant. These can be dealt with by way of either a vehicle defect rectification notice, whereby the rider has to get the exhaust changed and checked by an MOT garage within 14 days, or a fixed penalty.

Roads Policing officers in **South Wales Police** carry out monthly themed campaigns around all aspects of driving and vehicles as well as a number of all Wales campaigns, on themes such as drink-driving, misuse of mobile phones and the failure of vehicle occupants to wear seatbelts. They do not specifically target excessive noise made by motorcycles, but do carry out *Construction and Use* offences operations on all vehicles, especially in October in the build-up to winter and darker nights. They also carry out a motorcycle campaign in March and April in readiness for the summer months, having found that riders bring their machines out for the summer without first ensuring that they service their motorcycles to make them roadworthy. Problems concerning scrambler motorcycles are dealt with by local neighbourhood policing teams who look to deal with offenders at their home addresses rather than out on the mountains.

4.10 Quieter vehicles

The Welsh Government’s noise mapping suggests that the homes of hundreds of thousands of people across Wales are likely to be exposed to road traffic noise levels that exceed World Health Organization guidelines⁶¹. This situation cannot realistically be addressed solely through actions at a domestic level such as quiet road surfacing, noise barriers, insulation and traffic management. Tightening the noise limits for new vehicles is necessary if levels of public exposure are to be brought down. The Welsh Government supports ambitious proposals for tighter vehicle noise standards at a European level.

The ideal in terms of road transport would be the early uptake of electric vehicles powered by renewable energy. In July 2013, the Minister for Economy, Science and Transport announced the setting up of a low carbon vehicle expert steering group to provide advice and recommendations on the development of the sector in Wales. Its role includes identifying barriers and opportunities, identifying cost-effective options for government delivery and support for the sector, and promoting the uptake of low carbon vehicles to the public estate and business sectors. Further details may be found in the Minister’s statement⁶².

⁶¹ <http://www.euro.who.int/en/health-topics/environment-and-health/noise/publications/2009/night-noise-guidelines-for-europe>

⁶² <http://wales.gov.uk/about/cabinet/cabinetstatements/2013/lowcarbonvehicles/?lang=en>

4.11 Actions and long-term strategy

- a) The Welsh Government will make data derived from the 2012 noise maps available in a form that is helpful to the authorities responsible for managing road traffic noise in Wales.
- b) The Welsh Government will consider what criteria may be most appropriate for prioritising the designated noise action planning priority areas on the motorway and trunk road network for noise mitigation works, should budgets for such interventions be available.
- c) The Welsh Government, in developing an integrated local environment improvement package for communities, will, where appropriate, continue to offer grants to local authorities for innovative and cost-effective projects to reduce people's exposure to road traffic air pollution and noise, particularly where the interventions benefit poorer communities and are linked to multiple benefits.
- d) The Welsh Government will continue with its Local Government Borrowing Initiative, which should result in up to £170 million of additional capital funding being invested in highway improvements over the three financial years from April 2012 to March 2015, and some of these improvements such as resurfacing works will lead to noise improvements.
- e) Public authorities in Wales will investigate what other budgets may become available for specific road traffic noise mitigation interventions in designated priority areas over the next five years. Any such proposed interventions will be subject to an assessment of costs and benefits, and evaluation of their effectiveness following implementation.
- f) Public authorities in Wales will integrate their policies and programmes to reduce exposure to road traffic air pollution and noise so as to maximise the synergies and minimise the conflicts arising from those interventions and so achieve the best overall public health outcome.
- g) Work undertaken to deliver the *Wales Freight Strategy*⁶³ will be consistent with the road traffic noise policies in this action plan.
- h) The Welsh Government will implement any changes to speed limits on the trunk road network following the speed limit review.
- i) The Welsh Government will explore opportunities to increase public awareness of the need for more considerate driving behaviour on Welsh roads generally.
- j) The Welsh Government will seek to identify cost-effective options for government delivery and support for the low carbon vehicle sector, and

⁶³ <http://wales.gov.uk/topics/transport/freight/wfs/?lang=en>

to promote the uptake of low carbon vehicles to the public estate and business sectors.

- k) The *Active Travel (Wales) Act 2013*⁶⁴ will come into force in mid-2014. It creates new duties for highways authorities to consider the needs of walkers and cyclists and make better provision for them. It also requires both the Welsh Government and local authorities to promote walking and cycling as a mode of transport. By connecting key sites with active travel routes, the Act will encourage people to rely less on their cars when making short journeys.

⁶⁴ <http://www.legislation.gov.uk/anaw/2013/7>

5 Railway noise management

5.1 Overview

Railway noise affects relatively few people in their homes compared to road traffic noise, not least because there are relatively few railways compared to roads. Most homes face onto roads, but only a small proportion face onto railways. It is also well documented that, in general, railway noise causes less annoyance than equally loud noise from road or air transport^{65 66}. Where there may be exposure to railway noise, planning policy, *Welsh Transport Planning and Appraisal Guidance*⁶⁷ and the *Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996*⁶⁸ are there to prevent noise problems from arising in the first place. But high levels of exposure may still occur, for example owing to increases in night-time services or blocks of flats being built close to railway depots.

Increased use of rail grinding and electrification have the potential to significantly reduce the noise of individual vehicles on the main lines. On the other hand, the Welsh Government hopes (for environmental, economic and social reasons) and expects to see significant growth of the railways in Wales over the coming decade. Modal shift away from road and air transport, towards rail, has an important role to play in the holistic transport noise solution, but it is likely to mean more services and longer, faster trains. At the same time, demand for housing has led to more residential properties being built close to existing railways and railway infrastructure. If the railways are to be seen as a truly sustainable, environmentally friendly mode of transport, responsible bodies cannot be complacent about future railway noise.

As well as considering the areas of highest noise exposure indicated by the noise maps, the rail industry is required to respond to noise complaints. These often occur where the noise has an attention-catching character, for example train horns, curve squeal and rail joints.

The response to complaints requires a different approach to that for responding to noise maps. There can be a complex relationship between the measureable noise exposure and a complainant's strength of feeling. In some situations just hearing a noise, even at low levels, can be enough to generate complaint, particularly where there is a perception that the cause of the noise is unnecessary or unexpected.

Noise complaints require consideration on a case-by-case basis. Where action is appropriate, the rail industry seeks to follow the principle of **best practicable means**.

⁶⁵ http://ec.europa.eu/environment/noise/pdf/noise_expert_network.pdf

⁶⁶ http://www.uic.org/IMG/pdf/the_railway_noise_bonus_report_2.pdf

⁶⁷ <http://new.wales.gov.uk/topics/transport/publications/weltag/?lang=en>

⁶⁸ <http://www.legislation.gov.uk/uksi/1996/428>

Figure 11 Major railways in Wales included in the 2012 noise mapping



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

5.2 Who is responsible?

Network Rail is the infrastructure owner and operator of the national rail network. A number of individual passenger and freight train operating companies provide the train services. Passenger train companies are represented collectively by the Association of Train Operating Companies (ATOC). Noise issues may be the responsibility of one individual organisation or the joint responsibility of a number of these parties.

The Office of Rail Regulation is the independent safety and economic regulator for Britain's railways. Its functions include issuing licences to train operators.

Network Rail's responsibilities include line-side maintenance, track quality, infrastructure renewal and maintenance, engineering work, speed restrictions and property issues.

A noise policy working group representing the rail industry in Great Britain was established in response to the first round of action plans, to provide a co-ordinating and facilitating role in the development of a cross-industry approach to noise policy and legislation. It is guided by the principle that the railways should aim to be the most sustainable mode of transport in relation to noise

and its impacts. The secretariat is provided by RSSB, a not-for-profit organisation, owned and funded by major stakeholders in the railway industry but independent of any one party. The Welsh Government sits on the group to ensure that the interests of Wales are factored into all its activities.

5.3 The noise maps

There are a number of noise sources associated with the operational railway. The current noise mapping under the Environmental Noise Directive (“the Directive”) focuses on pass-by noise (engine/traction and rolling noise) as this is responsible for the highest emissions. The maps do not currently include noise from depots, horns or stations or squeal from curves and braking (although there are proposals at a European level to consider curve squeal in the third round of noise mapping). The noise from these “excluded” sources is often difficult to model as it requires detailed local knowledge, such as depot operations, or the occurrence may be intermittent and difficult to predict, as is the case with curve squeal.

More detailed rail traffic data (train type and length) has been used for the 2012 noise maps to achieve a greater level of confidence than in 2007.

Recent work has demonstrated⁶⁹ how improvements to track maintenance have achieved a significant noise reduction. Following the procurement of specialist engineering trains, Network Rail has raised the standard of track maintenance. The network-wide rail grinding regime has realised significant improvements in railhead condition, and indications are that this has achieved a network-wide average 4-decibel improvement in “acoustic track quality”. This improvement is incorporated in the 2012 noise maps.

The residential population data used to generate the exposure figures in Tables 4 and 5 from the 2012 noise maps came from the 2011 census. The residential population data used to generate the exposure figures in the previous round of action plans came from the 2001 census. For this reason and because of all the refinements to the input data and assumptions listed above, it is not valid to look at the change in noise exposure reported from one round of noise mapping to the next as if it represented the actual change in noise exposure over a five-year period.

Table 4 Population exposure using the day-evening-night noise indicator L_{den}

Noise source	Number of people exposed to these noise levels				
	55-59 dB	60-64 dB	65-69 dB	70-74 dB	> 75 dB
Major railways	23,000	14,600	10,200	5,700	2,100
All mapped railways	25,900	15,800	10,400	5,700	2,100

⁶⁹ <http://www.networkrail.co.uk/improvements/reducing-track-noise/>

Table 5 Population exposure using the night-time noise indicator
 L_{night}

Noise source	Number of people exposed to these noise levels				
	50-54 dB	55-59 dB	60-64 dB	65-69 dB	> 70 dB
Major railways	20,300	11,800	6,700	4,600	400
All mapped railways	22,000	12,300	6,800	4,600	400

5.4 Electrification

Electrification represents the first step towards achieving the Welsh Government's vision for a modernised rail infrastructure across Wales. On 16 July 2012 the Secretary of State for Transport announced the investment priorities for Network Rail to deliver in the period from 2014 to 2019. This included electrification of the Great Western Main Line to Swansea and the Valley Lines network. This covers almost all the railways for which noise maps have been produced under the Directive and its transposing Regulations.

An electrified rail network is more economical to operate and maintain, thereby delivering value for money to the taxpayer. Passengers will travel in a lower carbon, more sustainable way and experience a quieter, faster journey with savings of up to 20% on existing timetables. Electrification will allow quieter trains to replace diesel trains, including potentially the use of electric locomotives for freight trains. Electric locomotives are considerably quieter than the equivalent diesel locomotives, and electric freight locomotives would provide a particular benefit at night-time, as this is when freight movements often occur. It should be noted, however, that curve squeal will not be affected by electrification unless the track itself is treated.

5.5 Priority areas

In implementing the 2009 environmental noise action plans, the residential properties experiencing noise levels above 68 decibels (using an " $L_{Aeq,18h}$ " indicator) according to the 2007 railway noise maps were identified as **candidate noise action planning priority areas**⁷⁰. Following further investigation and the consideration of more accurate train speed data than was used to generate the 2007 maps, the Minister for Environment and Sustainable Development formally designated 14 **noise action planning priority areas** for railway noise in Wales. One is located in Swansea, the other 13 in south-east Wales. They are shown in Figures 12 and 13.

⁷⁰ It was decided to focus upon locations where the top 1% of all the people predicted to be exposed to an $L_{Aeq,18h}$ of 50 dB or greater reside, according to the results of the noise mapping, and the $L_{Aeq,18h}$ is at least 68 dB. Here $L_{Aeq,18h}$ is the equivalent continuous A-weighted sound pressure level for the period 06:00-24:00, averaged over all such periods in a year, calculated at a height of 4 metres on a 10-metre receptor grid and excluding the sound reflected from the building façade of the residence in question. The maximum value is taken from all the receptor grid points immediately surrounding the residence in question. When applied to the 2007 noise maps, less than 1% of properties exceed 68 dB, so the 68 dB cut-off threshold is the determining factor. Rather than continue to use the $L_{Aeq,18h}$ indicator, it is proposed to identify candidate priority areas from the 2012 noise maps using an initial screening criterion of an L_{den} of 73 dB, thus ensuring consistency with the approach being taken for road traffic noise.

Figure 12 Railway noise priority areas in south-east Wales based on the 2007 noise maps, shown in blue, with road traffic priority areas shown in red for comparison

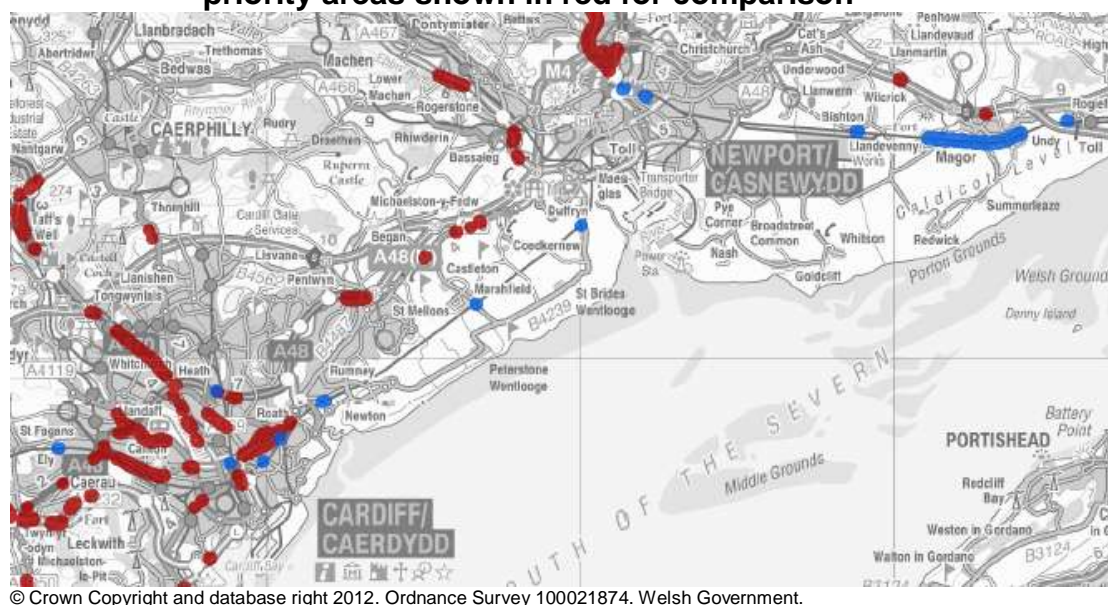


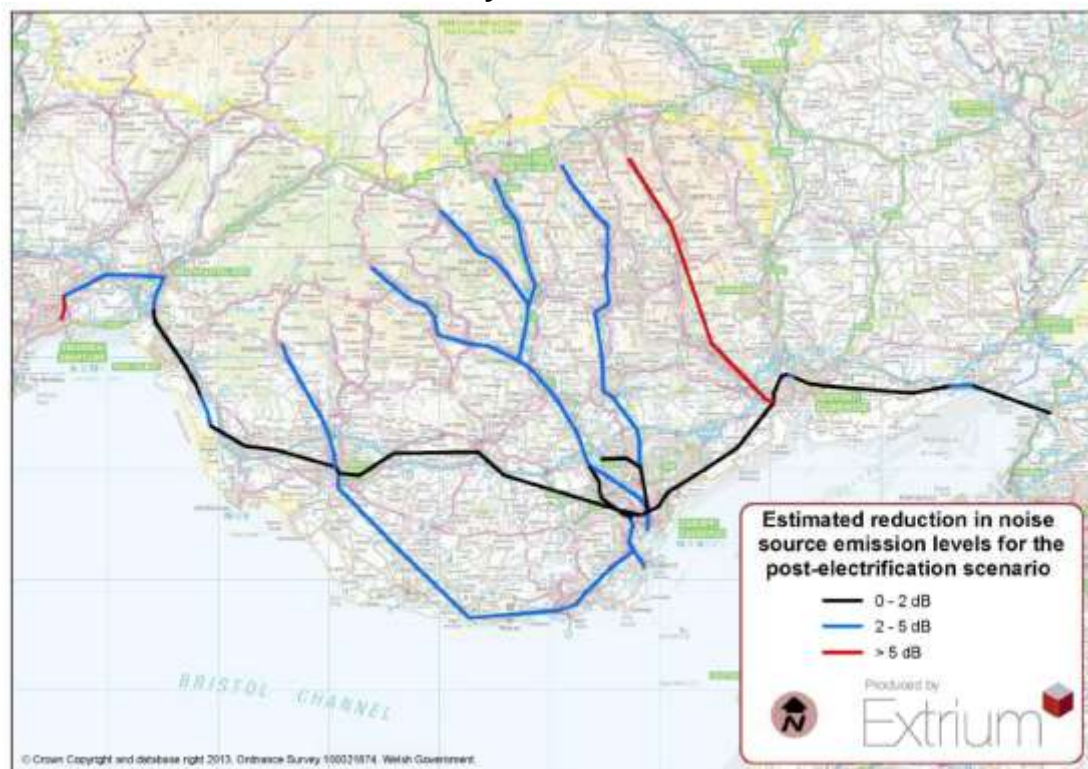
Figure 13 Railway noise priority areas in mid-south Wales based on the 2007 noise maps, shown in blue, with road traffic priority areas shown in red for comparison



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

The priority areas based on the 2007 noise maps are being reviewed in light of the 2012 maps and the results of an investigation carried out for the Welsh Government into the changes in noise levels likely to come with electrification (Figure 14). Additional hotspots based on other sources of intelligence could in principle also be designated, where they have been properly investigated and validated, and where cost-benefit analyses and proportionality suggest interventions may be justified.

Figure 14 Results of an investigation carried out for the Welsh Government by Extrium Limited into the estimated changes in noise levels likely to come with electrification⁷¹



5.6 Services provided by the rail industry

Network's Rail website⁷² informs members of the public of how noise issues are being addressed and how to make a complaint, either to Network Rail itself on its 24-hour helpline⁷³, if it relates to the condition of the track, or else to one of the train operating companies⁷⁴.

Train operating companies are increasingly designating quiet carriages on longer trains, particularly on long-distance intercity routes, in recognition of the preference of many passengers for a tranquil travelling environment, free from loud mobile phone conversations and other noisy distractions.

5.7 Actions and long-term strategy

- The Welsh Government will review the location of designated priority areas in light of the anticipated changes following electrification.

⁷¹ These noise reductions assume a uniform 50% increase in passenger vehicles (through longer trains, more trains or a combination of the two) on all lines to be electrified, and that all passenger vehicles running are of an electrified type. This may well not be the case in the centre of Swansea, so reductions there may not be as high as suggested on this map. Where the increase in passenger services is not as high as 50%, greater noise reductions may be achieved.

⁷² <http://www.networkrail.co.uk/aspx/1030.aspx>

⁷³ <http://www.networkrail.co.uk/aspx/1346.aspx>

⁷⁴ <http://www.networkrail.co.uk/contact/train-operator/>

- b) Where budgets for noise mitigation works on the railways are identified by responsible bodies with Great Britain remits in response to the Directive, designated priority areas in Wales will continue to be considered on an equitable basis with “important areas” in England and “noise management areas” in Scotland. Any such proposed interventions will be subject to an assessment of costs and benefits, and evaluation of their effectiveness following implementation.
- c) The Welsh Government will continue to work with the rail industry through its noise policy working group to explore avenues for further developing railway noise policy in Great Britain over the course of the next five years.
- d) The Office of Rail Regulation will monitor Network Rail’s progress in delivery of planned enhancements and renewal activity that will have a secondary benefit in terms of noise mitigation, and work with the noise policy working group and be guided by them on appropriate responses to the noise mapping carried out under the Directive.
- e) Work undertaken to deliver the *Wales Freight Strategy*⁷⁵ will be consistent with the railway noise policies in this action plan.

⁷⁵ <http://wales.gov.uk/topics/transport/freight/wfs/?lang=en>

6 Industrial noise management

6.1 Overview

Sounds coming from industrial sites can be many and varied, and can be considerably more noticeable and distracting than road traffic noise at the same decibel level. Low-frequency or tonal noise, impact noise and machines switching on and off are among the many sounds that have the potential to distress nearby residents, particularly during the night. If the person who hears the sounds also has separate concerns about the industrial site, for example regarding emissions to air or lights shining through their window, the effect of the noise may be more keenly felt.

Because of people's particular sensitivity to industrial noise, it has traditionally been assessed not in absolute terms but rather relative to the existing background sound level (notably in BS 4142:1997, *Method for rating industrial noise affecting mixed residential and industrial areas*, due to be revised in 2014). The louder the road traffic noise is as part of the background, the less likely people are to notice, or even be able to distinguish industrial sounds, while, in an otherwise quiet location, very low levels of industrial noise may be noticed by sensitive individuals and cause them distress. Although exposure to road traffic noise should be reduced because of its impact on health and wellbeing, industrial noise should be reduced at the same time or else it may become more distracting as it takes greater prominence against the decreasing traffic background. It may be less harmful to introduce industrial noise where road traffic noise is high than where it is low, despite this meaning a higher overall noise level.

On the other hand, there is a danger that if the acceptability of a new industrial noise source is assessed relative to the background level from all the existing noise sources, this may lead to an ever-increasing noise level where each new source to be added is allowed to be louder than the previous one, known as "creeping background". This is clearly inappropriate, because the total noise level has potential to cause harm to health and wellbeing regardless of whether individual components are noticeable. The absence of complaints does not mean everything is fine.

6.2 Who is responsible?

Around the turn of the century, the European Union's **integrated pollution prevention and control** regime superseded the UK's own domestic regulations for controlling emissions from major industrial sources. One of the changes that this brought about was the inclusion for the first time of noise conditions in operating permits (now called **environmental permits**) issued by the regulator, which in England and Wales usually meant the Environment Agency. Previously, noise from such sites would have been handled by local authorities using their powers under statutory nuisance legislation. From 1 April 2013, the regulatory functions of the Environment Agency in Wales passed to a new body, **Natural Resources Wales**.

Industrial operators have a responsibility to be good neighbours, and will be required to make any necessary improvements under the “polluter pays” principle. However, there is also a duty on planning authorities to ensure that noise-sensitive developments are not introduced close to existing noise sources without appropriate conditions being imposed on the developer to ensure that the resulting acoustic environment is acceptable to occupants. Developers are encouraged to initiate pre-planning discussions with both planning authorities and regulators to ensure the best outcome.

Natural Resources Wales

Natural Resources Wales brings together in a single body the former functions of the Countryside Council for Wales and the Welsh devolved functions of the Environment Agency and the Forestry Commission. Among the functions transferred from the Environment Agency are the issuing, variation and enforcement of environmental permits for the majority of industrial processes subject to integrated pollution prevention and control.

6.3 Integrated pollution prevention and control

The information in this section has been provided by Natural Resources Wales.

Noise from major industrial sources is regulated by Natural Resources Wales and local authorities through the *Environmental Permitting (England and Wales) Regulations 2010*⁷⁶. The role of Natural Resources Wales in regulating noise covers not only the larger industrial and waste installations identified as “Part A(1)” in Schedule 1 of the *Environmental Permitting Regulations* but also smaller waste operations that have environmental permits. The role of local authorities in regulating noise under the *Environmental Permitting Regulations* generally applies to smaller “Part A(2)” industrial installations.

Natural Resources Wales provides guidance for existing and new operators on how best to control noise. For example, in collaboration with the Scottish Environment Protection Agency and the Northern Ireland Environment and Heritage Service, the Environment Agency (which in Wales has now become part of Natural Resources Wales) produced *Horizontal Guidance Note IPPC H3 (Part 2)*. This document, generally referred to as the “H3” guidance, provides supplementary information to assist applicants in preventing and minimising noise and vibration. It can also assist in determining what constitutes **best available techniques** or “BAT” for a given installation. The H3 guidance is currently under review.

⁷⁶ <http://www.legislation.gov.uk/ukdsi/2010/9780111491423>

There are a number of ways that potential noise issues can be avoided or at least minimised to such an extent that they do not impact upon people or the natural environment. These include:

- locating new developments, whether noise-generating or noise-sensitive, so as to avoid noise issues arising in the first instance (in other words, through the planning system);
- preventing noise at source by good design and maintenance;
- minimising or containing noise at source by observing good working and management practices;
- increasing the distance between the source and receptors;
- using barriers or enclosures to prevent noise travelling; and
- avoiding noisy operations at certain times, such as at night.

Historically, noise control conditions have not always been included in environmental permits. In these circumstances Natural Resources Wales will work with local authorities to control noise levels until such permits have been reviewed and updated. Under the *Environmental Permitting Regulations* all new environmental permits include standard noise conditions that generally do not include specific noise limits. This is in recognition of the fact that the sound environment can change over time. There have been occasions where a noise limit has not afforded the protection needed. Only by assessing noise on a case-by-case basis can the true impact be measured.

Site operators are encouraged to undertake discussions with regulators prior to the submission of an application for an environmental permit. This allows any potential issues to be identified early in the process and helps to minimise delays during determination of the application.

As part of the permitting process, an applicant is required to address noise as part of the site's environment management plan. If noise is identified as a potential issue the applicant will need to provide a more detailed noise risk assessment, and modelling may also be necessary. The risk assessment should describe those parts of the operation that are likely to generate noise and also how the company plans to prevent noise. This can include reducing noise levels at night and maintaining equipment in good order. Regulators will ensure that the equipment and working practices meet the standard of best available techniques in order to limit disturbance to the local community and natural habitats.

If a particular noise source on a permitted site is identified as being a potential issue, the regulator will decide whether or not the noise level associated with it is likely to cause complaints. Where necessary, the regulator will agree improvements with the company to address any issues and include them in the site's noise management plan. The aim of such a plan is to consolidate all the noise issues on a site into a single document to help the operator understand the full requirements of its environmental permit. The plan is a "living document" that the operator will need to keep up to date.

Where a company consistently fails to operate in accordance with its permit or to undertake necessary improvement works, the regulator will consider taking enforcement action against that company. But often improvements are able to be made without the need for enforcement.

Box 11: A view from the Association of Noise Consultants

In responding to the consultation on this action plan, the Association of Noise Consultants advised as follows:

“Integrated pollution prevention and control should be considered as a method of introducing good practice onto industrial sites before issues arise, rather than a response to potential or existing noise issues.

“The initial acoustic audit of a site is relatively inexpensive, allowing the closest critical receivers to be identified, and existing plant/operation noise sources to be ranked in order of significance. Procedures for reducing noise emissions of critical plant/operations can then be included in the site’s procedures and procurement policies with a view to minimising emissions in the short, medium and longer term within the confines of BAT. These procedures should also ensure the site does not inadvertently install noisy plant that could lead to statutory nuisance, expensive retro-fit attenuation measures and/or limits on hours of operation.

“Procedures for identifying if new residential development is proposed adjacent to the site should also be included, with the appropriate response mechanisms. Otherwise the sites are relying on regulators to identify potential issues, if consulted on potential new residential development close to industrial sites.

“The new version of BS 4142 will include a more comprehensive assessment methodology for tonal noise. It is important to ensure the person assessing the noise has been trained to the required standard to carry out the assessment.”

6.4 Statutory nuisance

Noise complaints concerning industrial activities that are not subject to integrated pollution prevention and control under the *Environmental Permitting Regulations* (and that are therefore outside the scope of the Environmental Noise Directive) should be handled by local authorities. They are empowered to take action in relation to noise nuisance under the *Environmental Protection Act 1990*⁷⁷. See Chapter 7 for further details.

⁷⁷ <http://www.legislation.gov.uk/ukpga/1990/43>

Box 12: The All Wales Environmental Permitting Regulations (EPR) Link Group

The All Wales EPR Link Group is a specialist subdivision of the All Wales Pollution Technical Panel of Welsh local authorities and provides:

- an all Wales local authority response to consultations;
- permit templates for common industrial sectors such as minerals processes;
- member training and information exchange including workshops;
- direct links with Welsh Government specialists for sharing of technical information and emerging policy;
- representatives to attend UK groups such as the Industrial Pollution Liaison Committee and Industry Forum;
- links with national regulators; and
- lobbying based on evidence gained through actual practice and experience.

The group works to improve consistency of regulation across local authorities in Wales and provides a platform for the transfer of knowledge, skills and experience between officers, which in turn leads to a better level of service to local businesses across Wales.

Members of the group are multi-skilled and often work in other areas such as planning consultations, local air quality management, statutory nuisance investigation and environmental noise.

6.5 Actions and long-term strategy

a) Natural Resources Wales will:

- i) take a proportionate and risk-based approach to responding to industrial noise complaints in relation to the sites that it regulates under integrated pollution prevention and control;
- ii) determine how best to develop its internal capacity for dealing with industrial noise issues and its working relationships with other regulators in the short, medium and long term, so that it remains properly equipped to discharge its regulatory noise responsibilities following its separation from the Environment Agency;
- iii) continue to participate in the Environment Agency's noise sector group; and
- iv) become a member of the All Wales EPR Link Group with immediate effect, to enable regular sharing of best practice and training opportunities with local authority industrial regulators on matters of mutual interest such as industrial noise.

- b) When a noise-sensitive development such as housing is proposed close to an industrial site subject to integrated pollution prevention and control, or when a new major industrial development is proposed close to existing noise-sensitive receptors, the local planning authority should consult the environmental regulator and/or Public Health Wales and ask them to flag up any potential issues ahead of granting or refusing planning permission.
- c) Environmental regulators will respond as appropriate to consultations on proposals for new noise-sensitive developments close to industrial sites subject to integrated pollution prevention and control.
- d) Public Health Wales, on behalf of all Health Boards in Wales, will highlight the potential public health impacts associated with new major industrial developments at the consultation stage of planning and environmental permit determinations.
- e) The Welsh Government will work through its membership of the British Standards committee on residential and industrial noise to ensure that environmental regulators in Wales get clear and appropriate technical guidance to help them do their job.

7 Noisy neighbourhoods

7.1 Overview

The term **neighbourhood noise** can be applied to noise made in most circumstances. It is usually easy to identify and it tends to be confined to a small area.

Neighbourhood noise includes noise arising from within the community, such as trade and business premises, construction sites, localised industry, entertainment premises, domestic noise and noise in the street. Noise from all of these areas can be an unwanted intrusion that has an adverse effect on the quality of life of individuals in different ways. Intermittent noises can be more disruptive than continuous sound. However, low-level noise can cause just as much distress, resulting in annoyance and stress, sleep disruption and interference with communication.

Noise generation is an inevitable consequence of a busy society, and many people now live in quite high-density residential communities. As a result, individuals are now far more likely to be aware of and affected by neighbourhood noise, and it accounts for most of the complaints received by local authorities in Wales.

7.2 Legislation

Neighbourhood noise falls under the **statutory nuisance** regime set out in Part 3 of the *Environmental Protection Act 1990*⁷⁸. This Act defines statutory noise nuisance as noise emitted from premises so as to be prejudicial to health or a nuisance, and/or noise that is prejudicial to health or a nuisance and is emitted from or caused by a vehicle, machinery or equipment in a street.

Under the *Environmental Protection Act 1990* a duty is placed on a local authority following a complaint made by a person living within its area to take reasonable practicable steps to investigate the complaint. In most cases an officer of an environmental health department will consider, amongst other things, the type of noise, how loud it is, how often and at what times it occurs. Where a local authority is satisfied that a statutory nuisance exists, or is likely to occur or recur, they will issue an **abatement notice** on the person, prohibiting or restricting its occurrence or recurrence. In addition to the duties provided by Part 3 of the *Environmental Protection Act 1990* powers are provided by the *Noise Act 1996*⁷⁹ which aims to deal with excessive night noise coming from licensed premises or a residential dwelling between the hours of 11 pm and 7 am. The powers use a noise level to judge acceptability, and local authority officers may enter premises where there is noise beyond the prescribed levels and remove any equipment responsible for the noise. The *Noise Act 1996* also allows for the resolution of “one-off” noise problems

⁷⁸ <http://www.legislation.gov.uk/ukpga/1990/43/part/III>

⁷⁹ <http://www.legislation.gov.uk/ukpga/1996/37>

by enabling the offender to discharge their liability by paying a **fixed penalty notice**, if offered.

Best practice in local authority complaint response times

The Wales Heads of Environmental Health Group representing Welsh local authorities published best practice standards for noise incident response in 2010. According to this guidance, the minimum standard for response time is seven days, while best practice is a response within 24 hours of notification, or an immediate response for serious nuisance. As a minimum, there should be a written enforcement policy, formally approved by Members and communicated to staff. Best practice has monitoring of results feeding into a continuous review of policy, where compliance with the current Crown Prosecution Service and Cabinet Office guidelines is audited and reviewed and action taken to ensure ongoing compliance. The 2010 standards are currently undergoing a review.

7.3 Consultations on legislative changes

Noise abatement zones

Noise abatement zones were intended to provide a means to control creeping background sound levels and to tackle unacceptable noise environments resulting from multiple sources of noise. As part of the UK Government's "Red Tape Challenge", Defra and the Welsh Government have jointly sought views on the repeal of sections 63 to 67 of the *Control of Pollution Act 1974*⁸⁰ in relation to England and Wales. The aim is to abolish all existing noise abatement zones and prevent new ones from being established to save local authorities money and provide clarity for businesses. The consultation⁸¹ closed on 14 January 2013.

Home Office proposals for an Anti-social Behaviour, Crime and Policing Bill

On 22 May 2012 the Home Office launched its White Paper on tackling antisocial behaviour. *Putting victims first – more effective responses to antisocial behaviour*⁸² sets out the UK Government's plans to deliver on its commitment to introduce more effective measures to tackle antisocial behaviour in both England and Wales.

The Home Office draft proposals⁸³ for the *Anti-social Behaviour, Crime and Policing Bill*⁸⁴, published on 13 December 2012, proposed replacing nineteen

⁸⁰ <http://www.legislation.gov.uk/ukpga/1974/40>

⁸¹ <http://www.defra.gov.uk/consult/2012/12/07/noise-abatement-zones/>

⁸² <http://www.homeoffice.gov.uk/crime/anti-social-behaviour/white-paper/>

⁸³ <http://www.homeoffice.gov.uk/publications/about-us/consultations/community-remedy-consultation/>

⁸⁴ <http://services.parliament.uk/bills/2013-14/antisocialbehaviourcrimeandpolicingbill.html>

complex existing powers with six new ones, two of which relate to noise disturbance. These are:

- a **community protection notice**, which will deal with frequent “quality of life issues” such as noisy neighbours, and may be issued by the local authority, police, police community support officers and designated private and registered providers of social housing or other agencies designated by local authorities through community safety accreditation schemes; and
- a **community protection order (closure)** for premises associated with antisocial behaviour activities, which will allow the police or a local authority to act swiftly to protect the public by issuing a **closure notice** or **closure order**. A closure notice temporarily closes for 24 hours any property including licensed premises, businesses and private residences that are a magnet for trouble, whilst a closure order closes the premises for up to three months.

Although these new powers are not intended to replace the existing statutory regime in respect of noise nuisance, it is likely that the introduction of the *Anti-social Behaviour, Crime and Policing Bill* will impact on local authorities, the police and other regulatory bodies when dealing with noise nuisance.

Live Music Act 2012

Passed as an Act of Parliament in March 2012, the *Live Music Act 2012*⁸⁵ amends the *Licensing Act 2003*⁸⁶ to remove the regulatory burdens and associated costs from live music venues in England and Wales, which are now exempt from licensing laws. The *Live Music Act 2012* allows venues and premises to host live amplified music to audiences of up to 200 people (there is no maximum capacity for unamplified performances) between 8 am and 11 pm without first obtaining an entertainment licence via their local authority. The reforms are part of a wider UK Government strategy to tackle red tape and allow businesses more freedom to grow.

Each of these legislative changes is likely to impact on how statutory nuisance and neighbourhood noise is managed in Wales.

7.4 Types of neighbourhood noise

The most common neighbourhood noise complaints can be separated into approximately six categories. Each type of noise can be dealt with in different ways depending on current legislation and the approach to compliance and enforcement by the relevant regulatory bodies. For the purpose of this section each noise category has been explained in conjunction with the relevant legislation it falls under.

⁸⁵ <http://www.legislation.gov.uk/ukpga/2012/2>

⁸⁶ <http://www.legislation.gov.uk/ukpga/2003/17>

Category 1 – domestic noise

Domestic noise can be defined as unwanted sound or noise that can originate from a number of sources, such as dogs barking, loud televisions, deliberate banging or raised voices (where unreasonable) and DIY work.

Exposure to noise that is experienced within homes due to noisy neighbours over long periods of time can contribute to a reduction in health, wellbeing and quality of life. Many deprived urban communities experience unacceptable levels of nuisance noise from neighbours and this often coincides with areas that are already suffering from other environmental issues such as litter, graffiti and poor air or water quality. At one end of the spectrum, noisy neighbours can be an annoying distraction, preventing people from enjoying simple activities in their own homes – watching television, listening to music or reading a book. At the other end, excessive noise from neighbours can affect sleep, which in turn can be detrimental to all areas of life through its effect on health and wellbeing.

Statutory nuisance will occur where it can be concluded that the effect is prejudicial to health or that a nuisance exists (i.e. interfering with a person's ordinary use or enjoyment of their land). However it must be noted that statutory nuisance is limited to “the average person”, in other words, someone who is not unusually sensitive.

Although the *Environmental Protection Act 1990* provides a mechanism for the proactive prevention of statutory nuisance, the vast majority of cases dealt with by local authorities are reactive, in response to complaints made by individuals subject to the noise.

Where an individual is being disturbed by noise from a neighbour there are several different steps that can be taken that may address and resolve the problems being experienced. These steps may be informal or formal and use of them may depend on the level and nature of the nuisance being caused. A brief summary of these steps is provided below in Box 13. More detailed advice can be found in the Welsh Government's booklet *Sound Advice on Noise*⁸⁷.

Box 13: Process for making a complaint about noise nuisance

Step 1 – Approach the person responsible for causing the nuisance. The individual subject to the nuisance could approach their neighbour either personally or by other means, for example, by letter, and explain politely that they are being troubled by the noise. If the neighbour is a tenant a complaint could be made to their landlord. This could be a housing association, the council or a private landlord and as most conditions of tenancy require that

⁸⁷

<http://wales.gov.uk/topics/environmentcountryside/epq/noiseandnuisance/noiseact/soundadvice/?lang=en>

tenants do not cause nuisance to neighbours a local authority or housing association should take action if a nuisance is being caused.

Step 2 – Keep a noise diary. If the problem continues a noise diary should be kept to record the dates, times and cause of the noise as well as the effects the noise has on the individual.

Step 3 – Mediation. Where the problem isn't resolved by speaking to the neighbour, the individual could approach an impartial mediation service who would listen to the views of both sides and try and help them reach an agreement.

Step 4 – Contact the local authority's environmental health department. In most cases an officer of an environmental health department would investigate the complaint to see whether, in their professional judgement, the noise constitutes a statutory nuisance.

- Where a local authority establishes that there is a noise nuisance, it must generally serve an abatement notice on the person responsible. However, an abatement notice for noise can be delayed by seven days to give the local authority time to persuade the person to stop the noise nuisance.
- Failure to comply with an abatement notice about noise from a home could result in a fine of up to £5,000. If the noise is from a factory or a business, the fine can be up to £20,000.
- Where a complainant feels that the local authority has not acted in accordance with the legislation, they could make a formal complaint to the complaints department and, if still not satisfied, they can complain to the Public Services Ombudsman for Wales⁸⁸ who has the power to investigate alleged cases of maladministration in local authorities.

Step 5 – Take out a private action in the magistrates' court. An individual may make a complaint directly to a magistrates' court under section 82 of the *Environmental Protection Act 1990*⁸⁹. It is advisable that the individual informs the local authority and the person they are complaining about of their intentions before doing so. Guidance on the procedure for doing this is usually available from the local authority's environmental health section.

Though data about the number of incidents of domestic noise is not conclusive, in 2009 Rockwool Limited estimated that complaints to UK local authorities from all sources were approximately 300,000 per year.

The following three case studies show how, through collaboration with key stakeholders, the issues of domestic noise nuisance are being actively raised and addressed in Wales.

⁸⁸ <http://www.ombudsman-wales.org.uk/>

⁸⁹ <http://www.legislation.gov.uk/ukpga/1990/43/section/82>

Box 14: Wrexham County Borough Council's initiative in tackling noise issues from barking dogs

In 2012 Wrexham County Borough Council were commended in the local authority category of the John Connell Awards for their initiative to tackle noise nuisance caused by barking dogs within the community.

In 2010/11, 293 or 42% of noise-related complaints received by Wrexham County Borough Council were about dogs barking. This was a slight increase on the figures for 2009/10.

As a result of these figures, Wrexham took the initiative to put on a promotional event to encourage members of the public to come and talk to representatives of the environmental protection team about any problems they were experiencing in the community from dogs barking.

The event was also used to raise the public's awareness of the impact on the community of continually barking dogs by visually representing the noise caused by one barking dog. The level of noise caused by the barking dog was recorded and displayed on a screen which also displayed the level of background noise in the event itself. This allowed the attending public to compare the two types of noise and understand how a dog barking continually could cause a nuisance.

In addition to the event, further information and advice on what steps owners of dogs could take to help to prevent their dogs from barking was given out by other team members in areas popular with dog walkers.

Box 15: Collaborative working to reduce noise nuisance in Cardiff

Cardiff Council has reported that during 2011/12 they received a total of 2,937 complaints for domestic noise. The majority of complaints received by the local authority are stated to be from those areas with a large student population, and between 2008 and 2011 a total of 1,491 noise complaints were made in the Cathays area of the city where many students reside. In recognition of this, Cardiff University's student union works to raise students' awareness of these issues throughout "Freshers Fortnight" and the rest of the academic year. Representatives of the student union also attend local community meetings such as "Police and Community Together", "Plasnewydd Forum", "Keep Cardiff Tidy" and community regeneration schemes where particular concerns or issues can be raised by attendees and, where appropriate, resolved by the parties involved.

Box 16: Neighbourhood noise – Welsh local authority joint working

All 22 Welsh local authorities work together in the environmental health sphere through a number of **technical panels**. There is one for pollution control, and noise control is a significant area of work for that panel. Representatives of all 22 authorities share information, set standards for regulatory work, benchmark on their legal interpretation of noise statutes, discuss technical approaches and solutions to noise problems and share equipment on a mutual aid basis.

The panel also agrees a training programme for local authority staff and reviews an agreed set of best practice standards. These form part of a much larger suite of standards agreed by local environmental health services unique to Wales. This is reviewed annually as the current financial climate is challenging. It was hoped that the three-tier approach in the best practice standard would encourage local authorities to move from what authorities feel is a minimum standard to a good or best standard. Clearly, given the current constraints on public finance, it is a useful tool to ensure the continuation of at least a minimum standard in all key areas.

One of the most important areas of service provision for noise control is the ability to respond to noise complaints outside normal working hours. Unfortunately, this is often seen as an expensive operation and the number of local authorities offering night-time services has diminished over the last few years. Currently only Bridgend, Caerphilly, Cardiff and Swansea provide 24/7 cover for noise control work. However, seven additional authorities still provide some degree of night-time cover with the remaining authorities providing the service through planned overtime.

The technical panel liaises closely with the Welsh Air Quality Forum, with many officers serving on both groups. Clearly there is an opportunity for some of the possible synergies between air quality and noise to be delivered in Wales.

Category 2 – noise in the street

As with domestic noise, the statutory nuisance regime is the principal system of regulation for noise from vehicles, machinery and equipment in the street. The majority of cases about this type of noise tend to be complaint-led and typical issues that are covered by this noise source are car alarms from cars on the street, generators and hi-fi installations. Car alarms can occasionally give rise to serious noise nuisance due to faulty settings or false alarms and it is important to note that the noise source needs to be in an identifiable location for some hours before the statutory nuisance provision can be correctly applied.

Section 62 of the *Control of Pollution Act 1974* provides the method for controlling the noise from loudspeakers in the street, and under this legislation using loudspeakers in the street is restricted to the hours between 8 am and 9 pm. Using a loudspeaker for advertising, entertainment, trade or business is banned unless the loudspeaker is used in an emergency, or is being used to advertise a perishable commodity for human consumption, for example ice-cream vans. However, under section 62(3)⁹⁰ of the *Control of Pollution Act 1974*, action may be taken if ice-cream van chimes are sounding after 7 pm or before midday, or if they are sounded at any time as to cause an annoyance. There is also the *Code of Practice on Noise from Ice-Cream Van Chimes Etc. 1982* which points out that it is an offence (under the *Control of Pollution Act 1974*) to sound chimes “in such a way as to give reasonable cause for annoyance”.

Category 3 – entertainment noise from live and non-live music act venues

When dealing with noise control from live and non-live entertainment venues a two-track approach can be taken.

Proactive control is achieved by the *Licensing Act 2003* and Part 3 of the *Environmental Protection Act 1990*. However, it should be noted that as of 1 October 2012 under the *Live Music Act 2012*, some live music venues have been deregulated from the *Licensing Act 2003* if they meet certain criteria.

The *Licensing Act 2003* establishes a single integrated scheme for licensing premises that are used for the sale or supply of alcohol, to provide regulated entertainment or to provide late night refreshment. Permission to carry on some or all of these licensable activities is contained in a single premises licence and responsibility for issuing licences rests with local authorities. The provision of regulated entertainment to the public, or to club members or their guests, is one of the four key licensing objectives for all local authorities and is utilised primarily to prevent noise nuisance that is often associated with entertainment. Many local authorities provide comprehensive guidance and advice for businesses on the premises application process and conditions under the *Licensing Act 2003* on their websites.

Preventative action may be achieved under the *Town and Country Planning Act 1990*⁹¹. Although the *Town and Country Planning Act 1990* applies a tighter requirement on the control of noise, it is a system that is expected to balance the economic, social and environmental factors of a development.

Most complaints about entertainment noise occur in the summer months when windows and doors are left open for ventilation, and people use their gardens more. Even relatively modern purpose-built premises have often not been designed and constructed so as to prevent problems arising due to the “breakout” of noise caused by the use of amplified music, public address systems, video juke boxes, etc. In fact, many public houses were built prior to

⁹⁰ <http://www.legislation.gov.uk/ukpga/1974/40/section/62>

⁹¹ <http://www.legislation.gov.uk/ukpga/1990/8>

the common provision of amplified entertainment and are located immediately adjacent to large areas of residential property.

In respect of live music venues the Noise Council's *Code of Practice on Environmental Noise Control at Music Concerts*⁹² recommends that a music event organiser appoints a noise consultant to assess the background noise levels between the proposed venue and those living nearby who are likely to be affected by noise. Guideline noise levels are given in the code that the organiser must achieve, and sound equipment is then positioned to minimise noise disturbance and the sound level set to ensure compliance with guideline levels.

In addition to noise from live and non-live entertainment venues, nuisance noise may also arise from **spontaneous events**, otherwise known as "**raves**". Raves may take a number of forms, ranging from relatively small scale "party" type events arranged by local youngsters, through to large scale events organised "professionally", usually from outside the area, with persons travelling hundreds of miles for the experience.

A rave is defined under section 63(1) of the *Criminal Justice and Public Order Act 1994*⁹³ as:

"a gathering on land in the open air of 20 or more persons (whether or not trespassers) at which amplified music is played during the night (with or without intermissions), which by reason of its loudness and the duration and time at which it is played, is likely to cause serious distress to the inhabitants of the locality."

Here, "music" includes sounds wholly or predominantly characterised by the emission of a succession of repetitive beats.

In addition, section 63(1A) (as amended by section 58 of the *Anti-social Behaviour Act 2003*⁹⁴) also applies the definition of a rave to a gathering of 20 or more persons who are trespassing on land that is not in the open air (i.e. within a building) where amplified music is played at night.

Raves are well documented as causing serious noise nuisance, distress and disturbance to the local community, as a result of constant loud amplified music. Raves can also give rise to a number of criminal and civil offences including criminal damage, drugs offences, breach of the peace, noise nuisance, fly-tipping, and, perhaps more importantly, the increased fear of crime amongst those living nearby. Land can also be left in a condition, which is prejudicial to human or animal health.

The case study in Box 17 shows how Pembrokeshire County Council is working in partnership to deal with spontaneous events.

⁹² http://www.cieh.org/policy/noise_council_environmental_noise.html

⁹³ <http://www.legislation.gov.uk/ukpga/1994/33/section/63>

⁹⁴ <http://www.legislation.gov.uk/ukpga/2003/38/section/58>

Box 17: Spontaneous events – Pembrokeshire County Council

A memorandum of understanding or *Spontaneous Event Protocol* was drawn up by Pembrokeshire County Council's Public Protection Division in conjunction with Dyfed-Powys Police, the Pembrokeshire Coast National Park, the farming unions, the Country Landowners Association, the National Trust, the Forestry Commission, the Pembrokeshire Association of Local Councils, and the Countryside Council for Wales. The protocol sets out the range of statutory powers available to the various agencies, a common sense measure which partners within the community can take to assist the authorities in implementing these procedures, and detailed operational and joint working arrangements.

The protocol is a working document and includes fully up-to-date contacts of all key partners. The protocol has been successfully applied over the past several years and used to thwart a number of events. It is generic in the sense that it can deal with legally defined "raves" as well as those illegal events which may not meet the legal criteria but can similarly cause widespread distress in the locality, e.g. seasonal beach parties or gatherings of so-called "official car clubs" on private land.

Category 4 – construction site noise

Construction sites are a very common source of noise pollution. They are often in areas that were quiet beforehand and, therefore, the noise generated by their activities is very noticeable. Construction noise is an anticipated part of a development and therefore control of construction site noise is found in section 60 of the *Control of Pollution Act 1974*⁹⁵, which allows a local authority to place restrictions on working hours and the type of machinery used and set noise levels that it considers to be acceptable.

In order to help developers and local authorities determine what would be considered an acceptable level of noise from a construction site, the British Standards Institute has published BS 5228-1:2009, *Code of practice for noise and vibration control on construction and open sites: Noise*, which, amongst other things provides for:

- acceptable noise levels for a range of situations;
- technical data for commonly used construction site machinery; and
- equipment for a range of activities.

BS 5228 has been recognised by Welsh Ministers as an approved code of practice under section 71 of the *Control of Pollution Act 1974*⁹⁶.

⁹⁵ <http://www.legislation.gov.uk/ukpga/1974/40/section/60>

⁹⁶ <http://www.legislation.gov.uk/ukpga/1974/40/section/71>

Contractors will always be expected to have considered noise and noise impacts related to their operations and to use **best practicable means** to minimise noise impacts, for example, by adjusting working times, considering use of quieter methods, silenced machinery and acoustic barriers, and monitoring. At all times the best practicable means as defined in section 79(9) of the *Environmental Protection Act 1990*⁹⁷ must be employed to reduce noise.

For further information about best practice in construction site noise and the control of noise in and around buildings, please refer to section 2.3.

Category 5 – commercial, business and industrial premises not subject to integrated pollution prevention and control

Sometimes people at work or at home are disturbed by noise that originates from commercial or industrial premises. Examples are extraction flues, machinery noise, fan noises, vehicle movements, alarms and radios. Where these occur continuously or loudly, or when they are new noises, they can be very annoying.

Deliveries, collections and other servicing activities, if they are noisy and are carried out during unsociable hours, can also be disturbing to residents living nearby. Complaints about noise from commercial premises are investigated in the same way as noise from domestic premises under sections 79 and 80 of the *Environmental Protection Act 1990*. The difference is that in some cases the noise generated from some commercial premises is an unavoidable consequence of the nature of the work carried out. In this instance the noise from commercial, business and industrial premises benefits from the defence against statutory nuisance prosecution of best practicable means, which is provided by section 80(7) of the *Environmental Protection Act 1990*. Under best practicable means a business would need to show that it has done all that is reasonably practicable to reduce noise.

As with entertainment noise, preventative action may be achieved under the *Town and Country Planning Act 1990*, which applies a tighter requirement on the control of noise but must also balance the economic, social and environmental factors of a development.

Category 6 – burglar alarm noise

Under Part 7 of the *Clean Neighbourhoods and Environment Act 2005*⁹⁸, local authorities in England and Wales are provided with an adoptive power to designate all or part of their area as an **alarm notification area**. If an alarm notification area is designated, anyone responsible for premises in a designated area where an intruder alarm is installed must nominate a key-holder and notify the local authority. The key-holder should live nearby, be able to gain access and know how to silence the alarm if it goes off

⁹⁷ <http://www.legislation.gov.uk/ukpga/1990/43/section/79>

⁹⁸ <http://www.legislation.gov.uk/ukpga/2005/16>

accidentally. Failure to comply is an offence. However, alarm owners may be given the option of avoiding prosecution by paying a fixed penalty notice.

In addition to the alarm notification powers, the *Clean Neighbourhoods and Environment Act 2005* also provides a power of entry for officers of an environmental health department to silence an alarm without the use of force, or with force if supported by a valid warrant of entry, if an alarm has been sounding continuously for 20 minutes or intermittently for more than an hour and the noise is likely to give people living or working nearby reasonable cause for annoyance.

7.5 Actions and long-term strategy

As highlighted in the paragraphs above, the method for controlling neighbourhood noise is a patchwork of pieces of legislation, each with its own definitions, thresholds of acceptability and related guidance.

The division of responsibility between the Welsh Government and UK Government is varied. The forthcoming changes to legislation add a further dimension in managing noise nuisance and in particular neighbourhood noise.

It is clear that to further improve the management of neighbourhood noise it would be necessary to better understand how big a problem it is. However, currently no robust and consistent method exists to determine how many people or premises are affected by neighbourhood noise across Wales and how much each neighbourhood noise complaint actually costs a local authority to address.

In order to further explore, and address where appropriate, the issues raised in the sections above, as well as identify how the Welsh Government can improve the management of neighbourhood noise in a wider context, the following actions are proposed:

The Welsh Government will:

- i) consider which of the current guidance documents need to be reviewed and, where appropriate, liaise with stakeholders to update the guidance or produce new guidance;
- ii) review current practices in respect of statistical collection and analysis of neighbourhood noise complaints and consider the benefit of developing a single approach to data collection in Wales; and
- iii) consider what further research is needed in this area in liaison with other noise authorities in Wales and the wider UK.

8 Other forms of noise

8.1 Aircraft noise management

Civil aviation

The Civil Aviation Authority provides a focal point for receiving and responding to aviation-related environmental enquiries from the general public, including non-military aircraft noise complaints. Information regarding a wide range of aviation activities can be found on its website⁹⁹. If having read through this information, a member of the public would like to register a complaint, they can do so via the website.

The Environmental Noise Directive and its transposing Regulations require noise maps and action plans to be drawn up for civil airports with more than 50,000 take-offs or landings per year, excluding those purely for training purposes on light aircraft. There are no such airports in Wales.

Cardiff Wales Airport¹⁰⁰ is Wales' only international airport. It is located well outside the Cardiff and Penarth agglomeration boundary. The airport produces noise contours that can be considered during the planning process. There are no other significant civil airports in Wales associated with agglomerations.

Military aviation

The information in the remainder of this section has been provided by the Ministry of Defence.

To maintain operational capability, the Armed Forces must train effectively so that they are ready on arrival in their operational theatres for the tasks that face them. This is the case whether the operational theatre requires war-fighting operations, peace-support or peace-keeping duties, or humanitarian relief. It is vital therefore that military aircrew are fully trained to operate in the low-level environment for the tasks that they face during operations. This often requires military aircraft to train at low level. To help spread the noise disturbance the UK is split into a number of Low Flying Areas.

The whole of Wales is encompassed by Low Flying Area 7 (apart from a small area in the north-east of Powys which is within Low Flying Area 9). RAF Valley, RAF St Athan, the Air Weapons Range at Pembrey Sands, Army barracks at Brawdy, Royal Artillery range at Manorbier (where aircraft train in support of ground forces) and Field Training Centres at Castlemartin and Sennybridge are all in this area. Military fixed wing aircraft are judged to be low flying when they are less than 2,000 feet minimum separation distance

⁹⁹ <http://www.caa.co.uk/default.aspx?catid=810&pagetype=90>

¹⁰⁰ <http://www.tbicardiffairport.com/en>

from the ground. Light propeller-driven aircraft and helicopters are judged to be low flying below 500 feet minimum separation distance from the ground. Low Flying Area 7 also includes the Tactical Training Area 7T where fixed wing aircraft are authorised to fly as low as 100 feet minimum separation distance from the ground, although larger aircraft such as C-130 Hercules are only permitted to fly as low as 150 feet from the ground.

There is also a flow arrow system in the Cambrian Mountains in west Wales, called “the Mach-Loop” after the town of Machynlleth in the Dovey valley at the southern end of the circuit. The route is a roughly circular anti-clockwise flow, put in place so that aircrew can practise contour following through the valleys without danger of meeting someone doing the same coming in the opposite direction. As aircraft often make two circuits of the Loop, and the valleys tend to concentrate the sound, this can be the source of quite a number of complaints.

Training objectives involving low flying are met during the day whenever practicable and should not extend into the night unless absolutely unavoidable. Such training that does extend into the night is conducted to minimise noise as practicable.

Good relations are established and maintained with local communities, schools and so on by the air stations, for example through creating local websites or placing adverts in local newspapers to publicise exercises and any unusual range activity or aircraft movements. Where possible, activity during school exams or special events is limited to minimise disruption. Measures are taken to provide a balance between the essential training required and avoiding excessive environmental noise in the local community. These include staggering operating times or limiting night-time activity as far as is reasonably practicable.

The Ministry of Defence provides environmental noise contours to local authorities for its air stations to assist with their planning decisions.

Members of the public are advised to direct complaints regarding low flying to the Ministry of Defence using the contact details available on its website¹⁰¹.

¹⁰¹ <https://www.gov.uk/low-flying-in-your-area>

Noise from artillery ranges

At artillery ranges gunfire noise is managed in accordance with Ministry of Defence policy, and any local restrictions imposed on the range or training area are met in full in order to maintain the Ministry of Defence's position as a responsible neighbour within the community. For each planned exercise, noise assessments are carried out using gunfire assessment software to predict the noise emissions and each firing is monitored to ensure that noise does not exceed 130 decibels at the range boundary. Should atmospheric conditions change so as to affect the noise emissions, the firing is stopped and a change may be made to the firing position or impact area to keep the emissions within agreed levels.

8.2 Port noise management

The information in this section, including the content of Box 18, has been provided by Pembrokeshire County Council on behalf of the Port Health Technical Panel.

Most of the Welsh border is coastline, and ports have played an important role in the history of Wales throughout the ages. Towns such as Cardigan and Pwllheli thrived for hundreds of years as a direct result of their ports, and during the time of the industrial revolution the ports of Wales were some of the busiest in the world, exporting goods such as coal, slate, metals and wool.

Welsh ports are still thriving, and, although some heavy industry still relies on them for worldwide imports and exports, they have become unique places where often a mix of industrial, commercial, residential and leisure facilities coexists. As such the potential for noise impacts is great.

Large industries that rely on import and export of products are often located in areas where ships can berth nearby in order to load or discharge cargos. For anyone living nearby, both the industrial site itself and ships are potential noise sources, and as they are usually 24-hour operations those impacts are most keenly felt at night when people are trying to sleep. Examples of such industries are the oil refineries located on the Milford Haven waterway and the Port Talbot steelworks.

Large industries like the gas turbine power station recently completed at Pembroke are still being developed within ports. These will invariably be regulated under the integrated pollution prevention and control regime. However, associated activities not covered by this regime can also create noise impacts for local residents. For example, in 2010, Pembrokeshire

County Council served notices under the *Control of Pollution Act 1974*¹⁰² on a Dutch dredging company due to the noise created by work carried out in the Milford Haven waterway to prepare for the construction of the power station.

The redevelopment of Cardiff and Swansea docks to include large numbers of residential properties highlights the potential for noise impacts. Indeed, there have been a number of complaints raised by residents in the SA1 Swansea Waterfront developments regarding noise from industrial dock-based operations.

Noise from major industries is regulated by Natural Resources Wales and local authorities / port health authorities under integrated pollution prevention and control, as described in Chapter 6. However, ships that serve these larger permitted sites are often not included in the permits, and issues regarding emissions to the environment from ships are covered instead under statutory nuisance provisions in the *Environmental Protection Act 1990*¹⁰³, which are enforced by local authorities / port health authorities. The Port Health Technical Panel of Directors of Public Protection Wales, working in conjunction with the All Wales Pollution Technical Panel, has a specialist role in relation to port health and pollution matters, with the aim of improving consistency of approach across Wales.

Planning authorities have a responsibility to ensure that new developments, both residential and commercial, take full account of potential noise impacts. Current provisions require the preparation of environmental impact assessments for some types of development proposals. However, as can be seen in the case study in Box 18 below, it is important to consider noise from ships as well as from any new land-based developments.

Port owners, particularly those in close proximity to residential properties or those proposing redevelopment of unused land for residential use, need to be mindful of noise when proposing new developments and should be guided by planners, environmental scientists and local representatives.

In the long term, national or even international standards for port operations would be welcomed by Welsh local authorities. This is not just a Welsh or UK issue, as ships travel from country to country and there is potential for noise problems to be caused worldwide by noisy ships. One possible way forward would be to look at existing European models, such as in Denmark, where specific noise levels for ships have been introduced. Noise discussions could be taken forward with shipbuilders, the International Maritime Organization and regulators to develop international standards.

¹⁰² <http://www.legislation.gov.uk/ukpga/1974/40>

¹⁰³ <http://www.legislation.gov.uk/ukpga/1990/43>

Box 18: Milford Haven case study

The development of two liquefied natural gas terminals in Milford Haven has provided a vital boost to the UK energy market. The completion of the first in March 2009 led to the first shipment of liquefied natural gas from the Middle East, and a fleet of specially constructed ships began servicing the terminal. However, it soon became apparent that these large vessels produced a low-frequency noise which, given the right meteorological conditions, could travel distances of up to five miles and thus disturb local residents living within that radius, particularly at night. Residents immediately complained to the Environment Agency and Pembrokeshire County Council, and a joint meeting was convened to investigate the matter.

It was discovered that the integrated pollution prevention and control permit for the terminal did not cover vessels berthing at the terminal jetty, and so was not applicable to deal with noise complaints relating to those vessels. It therefore fell to the council's port health team to investigate and regulate the issue using the statutory nuisance provisions in the *Environmental Protection Act 1990*.

Pembrokeshire County Council established dialogue with the fleet operating company and the terminal operators in order to determine what measures could be undertaken to reduce the noise to acceptable levels. Consideration was given to achieving the desired reduction through the service of formal abatement notices. However, in view of the anticipated legal difficulties that could be encountered in pursuing legal action against a foreign-based company and the fact that it was unclear at the outset whether a technological solution even existed, it was decided instead to commence a programme of discussions to see whether the issue could be resolved through non-statutory means.

At the time of writing, over 500 complaints have been received by Pembrokeshire County Council, and the issue has yet to be fully resolved. However, the Council has been able to negotiate a programme of upgrade work, which is proving to be effective in eliminating the noise problem, and it is envisaged that when all vessels are finally upgraded the matter will be resolved.

The decision not to instigate legal proceedings resulted in a local resident making a formal complaint to the Public Services Ombudsman for Wales, although this was not upheld, and the council's ability to negotiate the programme of work has been well received in the community, particularly considering that the final cost of the upgrade programme is likely to run into tens of millions of pounds. It does, however, highlight the fragile position in which local authorities find themselves when dealing with highly technical matters of which it has little expertise, in this case, ship design and construction.

The above issue, along with noise complaints relating to other ships using the port of Milford Haven, has highlighted the lack of specific noise levels for shipping operations either locally or nationally, and the fact that no specific guidance exists on noise in this sector at a UK level, as it does for road traffic, railway and aircraft noise.

8.3 Wind turbine noise and the planning process

The guidelines for the assessment of wind turbine noise are set out in the ETSU report, *The Assessment and Rating of Noise from Wind Farms* (“ETSU-R-97”)¹⁰⁴, published in 1996 by the Department of Trade and Industry. They were adopted as the recommended method by the UK Government in 2004 and were included in the Welsh Assembly Government’s *Technical Advice Note (TAN) 8: Planning for Renewable Energy*¹⁰⁵ in 2005. There have since been a number of follow-up studies in relation to the applicability and implementation of these guidelines.

Box 19: Studies relating to ETSU-R-97

ETSU-R-97 was based on the findings of the Working Group on Wind Turbine Noise, which was made up of experts with a breadth and depth of experience in the assessment and control of the environmental impact of noise from wind farms, including tonal noise. It included representatives from planning authorities, technical officials and independent consultants as well as industrial experts. The report represents a consensus view of the entire group.

In response to reports of health concerns relating to low-frequency noise, the UK Government commissioned two independent studies in 2006 and 2007. The first of these, the Hayes McKenzie report, concluded that there was no evidence of health effects arising from infrasound or low-frequency noise generated by wind turbines. However, it noted that a noise phenomenon known as aerodynamic modulation was in some isolated circumstances occurring in ways not anticipated by ETSU-R-97.

The second study, carried out by Salford University, examined the prevalence and significance of the aerodynamic modulation phenomenon at wind farms in the UK. It concluded that the incidence of aerodynamic modulation was very low, appearing as a factor in only four of the 133 wind farms examined.

As a consequence of these studies it was concluded that the guidelines did not require alteration. However, it was recognised that noise limits will vary depending on the application, and therefore planning conditions will vary from site to site. Determining authorities should critically review and adapt

¹⁰⁴

<http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/energy/sources/renewable/s/explained/wind/onshore-offshore/page21743.html>

¹⁰⁵ <http://wales.gov.uk/topics/planning/policy/tans/tan8/?lang=en>

conditions wherever appropriate to suit the particular circumstances of the case.

It has since become apparent that inconsistent approaches have been taken to the practical application of ETSU-R-97. In 2011 the Department of Energy and Climate Change (DECC) appointed Hayes McKenzie to prepare a report that would establish current good practice in assessing and rating wind turbine noise, so as to ensure that planning authorities and developers would have clarity about best practice, to provide greater certainty and consistency within the planning system.

The Hayes McKenzie report was published in June 2011¹⁰⁶. It identified variations in the structure of reports, interpretation of data and assumptions used under the existing guidance. DECC has now asked the Institute of Acoustics to prepare guidelines following the report's recommendations¹⁰⁷. There will not be any fundamental alterations to ETSU-R-97, but rather the guidance is being refined to make it a more specific good practice guide. The revised guide is independent of DECC and the Welsh Government, but has been endorsed by them¹⁰⁸ and will be referred to in National Planning Statements.

It should be noted that all wind farm proposals in Wales are subject to a strict planning process, addressing environmental, visual, noise and community impacts. The process includes a requirement for a noise assessment to be undertaken that can be validated by an environmental health officer. In addition, TAN8 states that to avoid the potential for unacceptable noise impacts, 500 metres is considered a typical separation distance between a wind turbine and the nearest residential property. However, it also advises that local authorities should show flexibility when deciding an acceptable distance depending on local circumstances. Although there have been no significant reports concerning the danger to human health posed by wind farms sited in Wales, the Welsh Government's commitment to identifying and reducing health impacts remains a fundamental part of its renewable energy policy.

8.4 Minerals operations noise and the planning process

Minerals extraction operations, including underground and surface working and associated developments, can result in significant noise levels. Noise control at minerals sites is addressed through the planning process. The Welsh Government's *Minerals Planning Policy Wales*¹⁰⁹ document, published in December 2000, provides that wherever possible minerals workings should avoid any adverse effects on local communities and the environment, including detrimental effects from noise. Where this is not possible, noise

¹⁰⁶ <https://www.gov.uk/government/publications/analysis-of-how-noise-impacts-are-considered-in-the-determination-of-wind-farm-planning-applications>

¹⁰⁷ <http://www.ioa.org.uk/about-us/news-article.asp?id=270>

¹⁰⁸ <http://www.ioa.org.uk/about-us/news-article.asp?id=272>

¹⁰⁹ <http://wales.gov.uk/topics/planning/policy/minerals/mineralsplanning/?lang=en>

needs to be carefully controlled and mitigated to acceptable limits through the reasonable use of planning conditions attached to planning permissions. More detailed advice on the control of noise from minerals operations can be found in the Welsh Government's Minerals Technical Advice Notes, for example *Minerals Technical Advice Note 1: Aggregates*¹¹⁰ and *Minerals Technical Advice Note 2: Coal*¹¹¹, and in *Minerals Planning Guidance (MPG) 11*¹¹².

8.5 Occupational noise and hearing damage

The information in this section and the next has been provided by the Health and Safety Executive.

Noise at work can cause hearing damage that is permanent and disabling. This can be gradual, from exposure to noise over time, but damage can also be caused by sudden, extremely loud, noises. The damage is disabling in that it can stop people being able to understand speech, keep up with conversations or use the telephone.

Hearing loss is not the only problem. People may develop tinnitus (ringing, whistling, buzzing or humming in the ears), a distressing condition that can lead to disturbed sleep.

Noise at work can interfere with communications and make warnings harder to hear. It can also reduce a person's awareness of his or her surroundings. These factors can lead to safety risks – putting people at risk of injury or death.

There are many ways of reducing noise and noise exposure in the workplace. Nearly all businesses can decide on practical, cost-effective actions to control noise risks if necessary by looking at the advice available, for example on the Health and Safety Executive's noise at work website¹¹³ and in its toolbox for controlling noise risks¹¹⁴.

The *Control of Noise at Work Regulations 2005*¹¹⁵ (implementing *Directive 2003/10/EC of the European Parliament and of the Council of 6 February 2003 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise)*¹¹⁶) are now in force for all sectors of industry in Great Britain, including the music and entertainment sector. They aim to ensure that workers' hearing is protected from excessive noise in the workplace, which could cause them to lose their hearing and/or to suffer from tinnitus.

¹¹⁰ <http://wales.gov.uk/topics/planning/policy/mineralstans/2888891/?lang=en>

¹¹¹ <http://wales.gov.uk/topics/planning/policy/mineralstans/2877461/?lang=en>

¹¹² <http://wales.gov.uk/topics/planning/policy/mpgnotes/mpg11/?lang=en>

¹¹³ <http://www.hse.gov.uk/noise/>

¹¹⁴ <http://www.hse.gov.uk/toolbox/noise.htm>

¹¹⁵ <http://www.legislation.gov.uk/ukSI/2005/1643>

¹¹⁶ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0010:en:NOT>

8.6 Recreational noise and hearing damage

Music is not considered to be noise by those who choose to listen to it, but when it is so loud that it damages their hearing it fits the definition of noise, being unwanted or harmful sound.

Protecting members of the public from hearing loss or tinnitus caused by music and other sounds to which they choose to expose themselves cannot be addressed by legislation alone, and there have been a number of campaigns to raise awareness of the potential risks, run by the likes of Action on Hearing Loss¹¹⁷, Environmental Protection UK¹¹⁸ and the Noise Abatement Society¹¹⁹.

Working within the context of health and safety law as it currently stands requires employers to conduct their undertaking in such a way as to ensure, so far as is reasonably practicable, that the public is not exposed to risks to health and safety. This general duty is supplemented by the requirement under the *Management of Health and Safety at Work Regulations 1999*¹²⁰ that employers make a suitable and sufficient assessment of the risks to members of the public to help decide what measures need to be taken. The law does not prescribe what control measures would be reasonably practicable in each and every case. That is a judgement that has to be made by individual organisers and venue operators based on the particular risks, which they are best placed to assess.

The Health and Safety Executive's principles of sensible risk management recognise the benefits of recreational activities such as going to music events, and it seeks to ensure that people can benefit from participation in these activities without being exposed to unacceptable risks to their health and safety. Further guidance is available to organisers, promoters and venue managers to assist in risk assessment and implementation of suitable risk control measures, and to facilitate compliance with health and safety legislation¹²¹.

Standards relating to personal music players have recently been revised to take into account safety issues relating to hearing. The approach adopted in the amended standards is based on an average sound pressure limit of 85 decibels (A-weighted). This is a level considered safe under all conditions of use. There is the possibility for the consumer to override this limit and reach a maximum level of 100 decibels. The user is provided with an audible warning every twenty hours of use at this level, and warnings and safety information must be provided with every product.

¹¹⁷ <http://www.actiononhearingloss.org.uk/about-us/wales.aspx>

¹¹⁸ <http://www.environmental-protection.org.uk/>

¹¹⁹ <http://noiseabatementociety.com/campaigns/love-your-ears/>

¹²⁰ <http://www.legislation.gov.uk/ukSI/1999/3242>

¹²¹ <http://www.hse.gov.uk/event-safety/>

The Department for Business, Innovation and Skills (BIS) formulates and implements consumer safety legislation, but it is the role of local authority trading standards services to perform market surveillance checks and enforce this legislation.

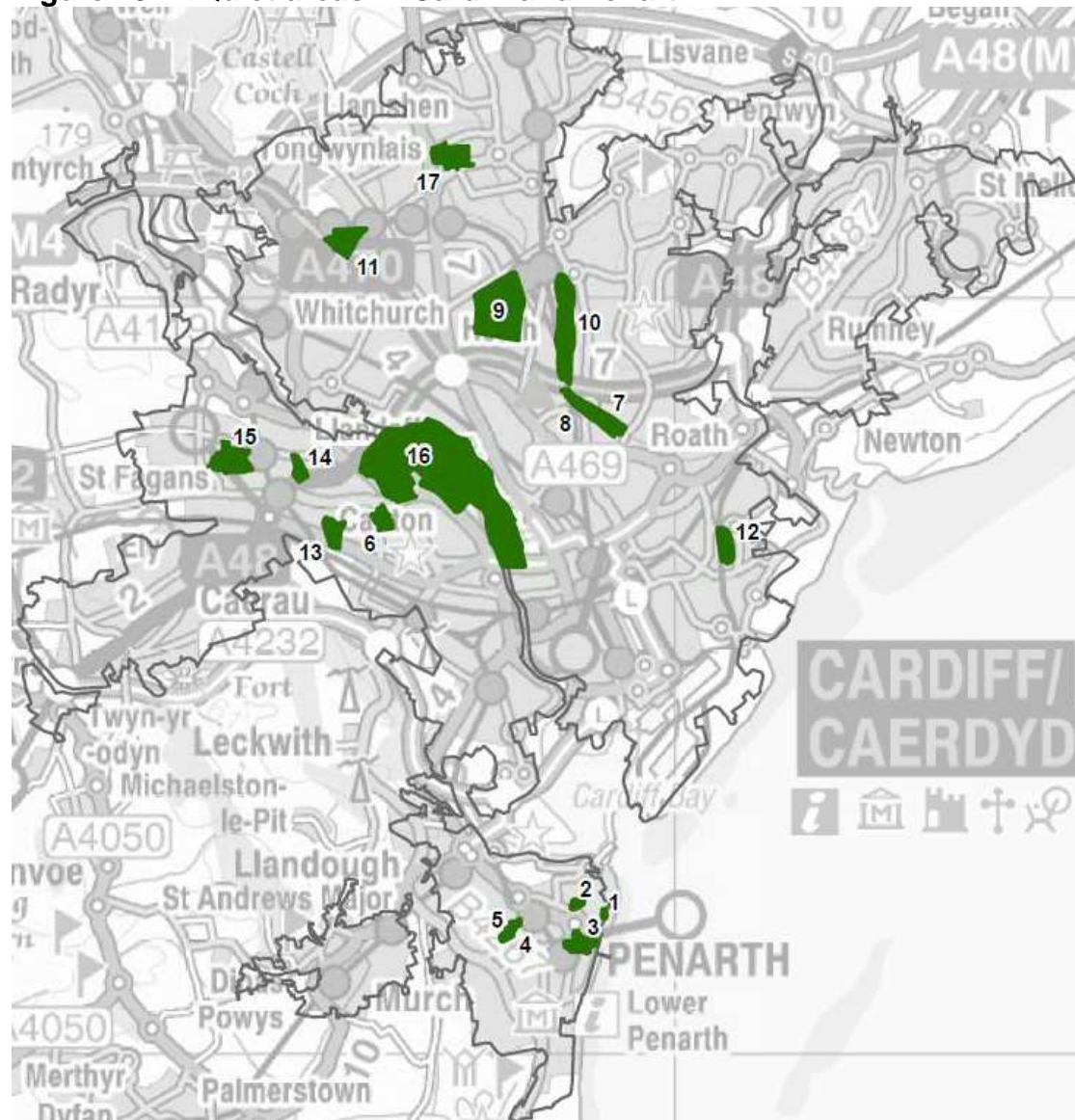
9 The Cardiff and Penarth agglomeration

9.1 Overview

There are 17 quiet areas in this agglomeration:

- | | |
|----------------------------------|---------------------|
| 1 – Penarth Head Lane | 10 – Roath Park |
| 2 – Belle Vue Park | 11 – Parc Caedelyn |
| 3 – Alexandra Park | 12 – Splott Park |
| 4 – Golden Gates | 13 – Victoria Park |
| 5 – Victoria Playing Fields | 14 – Insole Court |
| 6 – Thompson’s Park | 15 – Fairwater Park |
| 7 – Roath Park Recreation Ground | 16 – Bute Park |
| 8 – Roath Park Pleasure Gardens | 17 – Llanishen Park |
| 9 – Heath Park | |

Figure 15 Quiet areas in Cardiff and Penarth



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

Besides its tranquil green spaces, the agglomeration has various tranquil indoor spaces that are free for people to enter to escape the hustle and bustle of the urban environment, including in the heart of the city the National Museum and Cardiff's central library. People who live or work in Cardiff are also entitled to free entry to Cardiff Castle, whose indoor and open areas are shielded very effectively from traffic noise by the castle's outer walls.

The results of the second round of noise mapping for the agglomeration in population terms are given in Tables 6 and 7. They were derived using 2011 census data, whereas the results of the first round of noise mapping used 2001 census data.

Table 6 Population exposure using the day-evening-night noise indicator L_{den} (out of a total population of 359,400)

Noise source	Number of people exposed to these noise levels				
	55-59 dB	60-64 dB	65-69 dB	70-74 dB	> 75 dB
Major roads	27,800	11,500	9,200	12,200	600
All mapped roads	47,100	36,400	35,600	14,400	600
Major railways	7,200	5,100	5,100	2,400	1,300
All mapped railways	8,000	5,100	5,100	2,400	1,300
Industry	1,700	500	0	0	0

Table 7 Population exposure using the night-time noise indicator L_{night} (out of a total population of 359,400)

Noise source	Number of people exposed to these noise levels				
	50-54 dB	55-59 dB	60-64 dB	65-69 dB	> 70 dB
Major roads	16,200	9,700	13,400	800	100
All mapped roads	38,800	40,600	16,300	800	100
Major railways	6,200	5,300	2,500	2,200	200
All mapped railways	6,200	5,300	2,500	2,200	200
Industry	1,200	300	0	0	0

9.2 Cardiff Council

The information in this section has been provided by Cardiff Council.

Noise priorities and services

Cardiff Council's pollution control team is responsible for investigating service requests with regard to noise pollution and noise nuisance. It is a mixed team of environmental health and technical officers and reacts to service requests across the whole city.

Cardiff Council operates a dedicated night-time noise service that is reactive to both ongoing and new noise complaints. A dedicated team of two officers working a fixed shift in peak periods of demand from Thursday through to Sunday evenings is available to respond directly to any service requests that

are received after seven o'clock in the evening through to the early hours of the morning. Parallel to the dedicated night-time noise service a duty officer system is also in place that responds to complaints of pre-assessed noise nuisance, property and car alarms, emergency management issues and other functions within the environmental health remit. This service operates seven days a week.

During the 2012/13 financial year Cardiff Council received 3,386 service requests relating to noise from commercial, domestic and industrial sources. The most common cause of complaint within this time period was from loud amplified music in domestic situations. Other sources of noise such as barking dogs, general disturbance and property alarms also create high demands on the service as can be seen from the statistics in the table below.

Table 8 Breakdown of noise complaints received by Cardiff Council in 2011/12 and 2012/13

Noise source	Complaints (domestic) in 2011/12	Complaints (domestic) in 2012/13	Complaints (commercial) in 2011/12	Complaints (commercial) in 2012/13
Amplified music	1,877	1,609	184	141
Car alarm	30	34	2	2
Construction	5	9	26	16
DIY	35	51	0	1
Dogs	424	391	0	2
General	584	578	54	54
Loud television	19	34	0	0
Plant	28	55	89	133
Property alarm	144	172	61	55
Transport / noise in the street	0	0	22	7
Other animals	9	10	0	0

In respect of service requests the pollution control service is reactive in nature. However, proactive work to minimise disturbance from noise and vibration is undertaken through the planning and licensing regimes.

As a statutory consultee, the pollution control team provides professional advice to the planning and licensing committees on the impact of new developments and also recommends conditions that should be added to consents in order to protect public health. Conditions and recommendations take into account the existing noise climate and provide protection to the amenity of existing or future residents. The process also provides officers with the opportunity to require site-specific noise and vibration surveys to ensure that any changes in an area do not give rise to disturbance or statutory nuisance.

Special regard is given to large developments where protection from transport-derived noise is considered in order to ensure compliance with the World Health Organisation's guidelines for acceptable internal noise levels¹²². The pollution team also undertakes its own in-house noise monitoring exercises to ensure that requirements in relation to standards such as BS 4142, TAN11¹²³ assessments and calculation of road traffic noise are met.

The pollution control team within Cardiff Council has a close working relationship with other partner agencies to ensure that wider antisocial behaviour is tackled just as rigorously as direct neighbour nuisance. Close working links with the council's antisocial behaviour and tenancy management teams are in place to ensure that council tenants comply with conditions in their tenancy agreements. A dedicated member of staff from the pollution team provides support and assistance to these teams when sharing complaint-based information or when joint enforcement initiatives are required. Joint working with other agencies such as South Wales Police has also allowed the council to design specific operations to tackle neighbour nuisance and antisocial behaviour. Successful operations have included additional joint patrols in student-populated areas at the start of "Freshers Fortnight" along with "Operation BANG" initiatives for Halloween and Bonfire Night.

Development priorities in the local development plan

Cardiff's deposit local development plan¹²⁴ was approved by the council for consultation purposes on 26 September 2013 and a six-week consultation was held from 15 October to 26 November 2013. The next key steps in the preparation process will be submission for examination in August 2014 and adoption in October 2015.

Welsh Government guidance set out in *Planning Policy Wales*¹²⁵ and TAN11 requires development plan policies to consider noise when planning new developments and have regard to the noise action plans adopted under the Directive, including the need to protect urban quiet areas against an increase in noise. In order to respond to these issues the deposit plan includes policy EN13 (*Air, Noise, Light Pollution and Contaminated Land*) which takes into account the designation of urban quiet areas and requires special consideration where noise-generating development is proposed in or near such areas, thereby protecting them from the intrusion of noise. Furthermore, traffic management measures and new developments proposed in the deposit plan will need to address the noise action planning priority areas identified by the Welsh Government under the Directive.

¹²² <http://www.euro.who.int/en/health-topics/environment-and-health/noise/publications/2009/night-noise-guidelines-for-europe>

¹²³ <http://wales.gov.uk/topics/planning/policy/tans/tan11/?lang=en>

¹²⁴ http://www.cardiff.gov.uk/content.asp?nav=2870,3139,5845,6822&parent_directory_id=2865

¹²⁵ <http://wales.gov.uk/topics/planning/policy/ppw/?lang=en>

Policy EN13 (Air, Noise, Light Pollution and Contaminated Land)

Development will not be permitted where it would cause or result in unacceptable harm to health, local amenity, the character and quality of the countryside, or interests of nature conservation, landscape or built heritage importance because of air, noise, light pollution or the presence of unacceptable levels of land contamination.

How noise will be taken into account by the local planning authority when granting permission for new developments

Noise can have a harmful impact on people's health and quality of life, local amenity and wildlife. Major transport routes (road, rail and air) and some industrial and commercial activities can generate particularly high noise levels. Housing, schools and hospitals can be particularly sensitive to noise, as can areas of landscape, wildlife or historic importance.

New developments that would give rise to high noise levels, including proposed transport schemes, should be located and designed so as to minimise their noise impact on existing and proposed communities and areas of landscape, wildlife and historic importance. Where possible, particularly noise-sensitive new developments should be located away from significant existing or proposed noise sources. Where such developments need to be located close to transport infrastructure for access reasons, they should be designed so as to reduce noise impact.

Where necessary, developers will be required to provide an assessment of noise impact, together with proposals for mitigation.

Quiet areas and priority areas

The first tranche of quiet areas in Cardiff was identified by grouping together all acceptable open green space or recreation space available for nomination within the agglomeration boundary. The suitability of nominations was assessed against a tranquillity assessment, levels of use and facilities for community and recreational use along with historical, botanical and wildlife biodiversity.

In the second round of noise mapping and action planning, which takes into account an amendment to the Cardiff and Penarth agglomeration boundary to include Cardiff Castle, Bute Park and Pontcanna Fields, the council took the opportunity to identify further quiet areas. Some of these were recommended following increased interest from local forums and groups such as the Insole Court Gardens Preservation Group.

The highways department within Cardiff Council is implementing a staged process of road resurfacing for poor and damaged road surfaces. There are existing resurfacing programmes planned for some of Cardiff's first round

noise action planning priority areas and the council is examining how any future phases of planned resurfacing works may take these areas into account.

9.3 The Vale of Glamorgan Council

The information in this section has been provided by the Vale of Glamorgan Council.

Within the Vale of Glamorgan Council, noise control and advice is provided by the Pollution Control Team in Public Protection. It reacts to around 1,500 nuisance complaints per year, including noise from domestic, commercial, industrial and construction sources. Officers utilise both statutory and non-statutory tools to investigate and resolve these. There is no formal out-of-hours service but occasional night-time and weekend visits are undertaken, and surveillance equipment is frequently employed for evidence gathering.

The council has sought residents' views on noise through its *Residents Survey 2011-2012*. When asked about different types of noise pollution, noise from animals (10% of residents) and noise from neighbours (9%) were most likely to be reported across the sample as a whole, but those in the east were more likely to report noise pollution from traffic (15%) than anything else.

Proactive noise and vibration control includes commenting on around 300 planning applications per year. Recommendations, conditions and advice are provided seeking information on existing noise levels, predicted noise impacts and noise control measures. Noise and vibration from minerals sites is controlled primarily through specific planning conditions that are reviewed from time to time. For major projects, construction environment management plans, which include noise and vibration controls, are required. The team provides bespoke acoustic advice for council managed construction projects and has measured noise impacting upon a bat roost within council premises. The team also works closely with licensing colleagues as a formal consultee to prevent public nuisance.

The Vale has a civilian and a military airfield, both well outside the agglomeration boundary. Cardiff Wales Airport produces noise contours that can be considered during the planning process. There is established contact with the military aerodrome if noise complaints are received in relation to military flights.

Quiet areas in Penarth were nominated by local Members from wards within the agglomeration boundary, and an open space background paper has been prepared as part of the evidence base for the local development plan¹²⁶. The background paper seeks to identify the amount and distribution of a range of

¹²⁶

http://www.valeofglamorgan.gov.uk/en/living/planning_and_building_control/planning_policy/local_development_plan/deposit_ldp_and_supporting_documents_2013.aspx

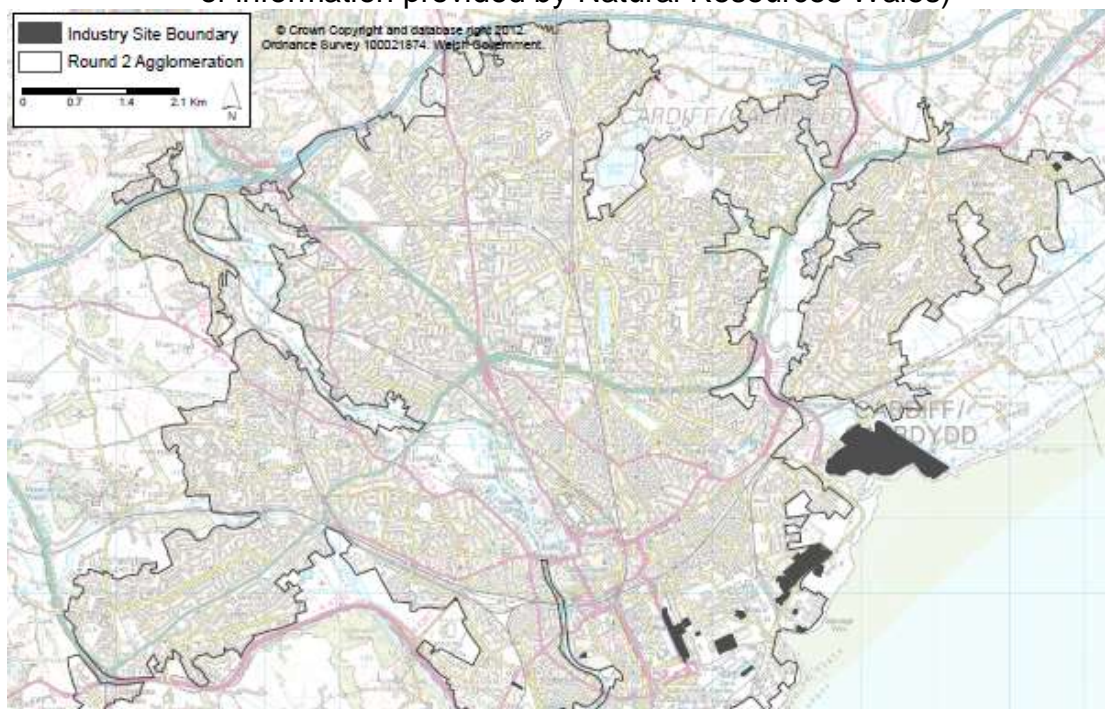
open space types and determine areas of deficiency or surplus that might be addressed through the plan. It considers areas for quiet contemplation such as public parks, gardens and cemeteries. The open space background paper has reference to the designated quiet areas, including maps of their locations. In addition, quiet areas have been shown on the local development plan's constraints map and this, together with the impact of environmental noise, has been included in the health impact assessment of the deposit local development plan.

The parks department, whilst working with limited resources, will recognise designated quiet areas and other tranquil urban green spaces and keep to the Green Flag Award principles wherever possible.

9.4 Major industry

Noise from existing sources affecting new noise-sensitive developments is best addressed through appropriate conditions at the planning stage rather than after construction has already gone ahead. For the convenience of developers and planners considering whether they need to consult regulators or site operators on such matters, Figure 16 shows the locations of the industrial sites in or near the Cardiff and Penarth agglomeration that are subject to integrated pollution prevention and control, at the time of the 2012 noise mapping. However, smaller, more localised industrial noise sources will also need to be considered.

Figure 16 Major industry in or near the Cardiff and Penarth agglomeration (map produced by Extrium Limited with the aid of information provided by Natural Resources Wales)



9.5 Actions and long-term strategy

a) Cardiff Council will:

- i) protect quiet areas and address priority areas when drawing up its local development plan and supplementary planning guidance;
- ii) give consideration to noise-generating and noise-sensitive development proposals; and
- iii) take priority areas into consideration in its road resurfacing work

so as to reflect the statements in section 9.2 of this action plan.

b) The Vale of Glamorgan Council will continue to address noise issues in accordance with the statements in section 9.3 of this action plan.

c) Natural Resources Wales will take into consideration priority areas, designated quiet areas and other tranquil urban areas when determining permits for industrial sites.

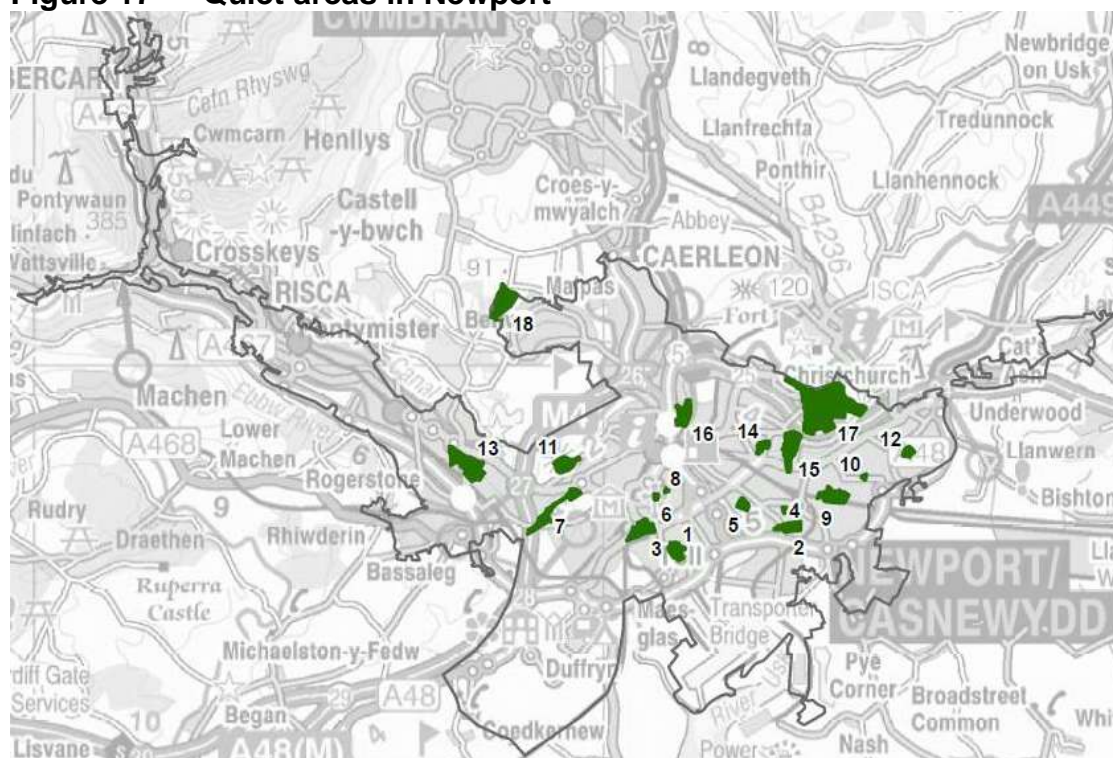
10 The Newport agglomeration

10.1 Overview

There are 18 quiet areas in this agglomeration:

- | | |
|--|-----------------------------|
| 1 – Pill Recreation Ground | 10 – Ladyhill Park |
| 2 – Lliswerry Recreation Ground | 11 – Allt-yr-yn Wood |
| 3 – Belle Vue Park | 12 – Ringland Top |
| 4 – Oliver Road Park | 13 – Cefn Wood |
| 5 – Lysaghts Park | 14 – Woodland Park |
| 6 – Clifton Road Park | 15 – Beechwood Park |
| 7 – Coed Melyn Park and Bassaleg Playing Fields | 16 – Shaftesbury Park |
| 8 – Chapel Park | 17 – St Julians Park |
| 9 – Aberthaw Road Park (locally known as Lliswerry Pond Field) | 18 – Ty-Coed Playing Fields |

Figure 17 Quiet areas in Newport



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

Newport qualifies for noise mapping of all its roads, railways and major industries for the first time in 2012 under the Environmental Noise Directive (“the Directive”) and its transposing Regulations (“the Regulations”). Its agglomeration boundary has been set to include green spaces on the periphery that Newport City Council indicated it might wish to nominate as candidate quiet areas. The north-western component of the agglomeration falls under the administration of Caerphilly County Borough Council, though the town of Caerphilly itself lies well outside the boundary.

The results of the second round of noise mapping for the agglomeration in population terms are given in Tables 9 and 10.

Table 9 Population exposure using the day-evening-night noise indicator L_{den} (out of a total population of 148,500)

Noise source	Number of people exposed to these noise levels				
	55-59 dB	60-64 dB	65-69 dB	70-74 dB	> 75 dB
Major roads	28,600	13,800	5,700	2,500	1,000
All mapped roads	39,100	20,600	13,600	3,600	1,100
Major railways	3,100	1,600	800	1,000	400
All mapped railways	4,700	2,300	1,000	1,000	400
Industry	900	300	100	0	0

Table 10 Population exposure using the night-time noise indicator L_{night} (out of a total population of 148,500)

Noise source	Number of people exposed to these noise levels				
	50-54 dB	55-59 dB	60-64 dB	65-69 dB	> 70 dB
Major roads	22,300	8,600	3,400	1,200	500
All mapped roads	28,600	17,200	5,300	1,200	500
Major railways	2,800	1,100	900	1,000	100
All mapped railways	3,900	1,300	1,000	1,000	100
Industry	700	200	100	0	0

10.2 Newport City Council

The information in this section has been provided by Newport City Council.

Noise priorities and services

Newport City Council's public protection section is responsible for investigating service requests with regard to noise pollution, noise nuisance and noise-related antisocial behaviour. Officers involved include environmental health officers, technical officers, community safety wardens and antisocial behaviour liaison officers. Service requests are responded to from across the whole authority.

Initial and second noise service requests relating to domestic properties are responded to by community safety wardens between 3 pm and midnight, seven days a week. Face-to-face advice is provided to alleged offenders at that time in order to try to achieve early resolution of cases in an efficient manner. Where service requests continue to be made, environmental health officers become involved to initiate investigations and action under relevant legislation. Antisocial behaviour liaison officers work closely with environmental health in appropriate cases.

Service requests relating to car alarms, property alarms and commercial premises are responded to by environmental health solely, in recognition of the complexity of such situations.

During the 2011/12 financial year Newport City Council received over 2,700 service requests relating to noise from commercial, domestic and industrial sources. The most common cause of complaint within this time period was from loud amplified music in domestic situations. Other sources of noise such as barking dogs and general disturbance also create high demands on the service.

In respect of service requests the service is reactive in nature. However, proactive work to minimise disturbance from noise and vibration is undertaken through the planning and licensing regimes.

As a statutory consultee, environmental health provides professional advice to the planning and licensing committees on the impact of new developments and also recommends conditions that should be added to consents in order to protect public health. Conditions and recommendations take into account the existing noise climate and provide protection to the amenity of existing or future residents. The process also provides officers with the opportunity to require site-specific noise and vibration surveys to ensure that any changes in an area do not give rise to disturbance or statutory nuisance.

Special regard is given to large developments where protection from transport-derived noise is considered in order to ensure compliance with the World Health Organization's guidelines for acceptable internal noise levels¹²⁷. Officers also ensure that requirements in relation to standards such as BS 4142, TAN11¹²⁸ assessments and calculation of road traffic noise are met.

Newport City Council's public protection section has a close working relationship with other partner agencies to ensure that noise nuisance and antisocial behaviour are dealt with. Close working links with registered social landlords (including Newport City Homes, which was established after the stock transfer of the majority of the authority's housing stock) are in place to ensure that tenants comply with conditions in their tenancy agreements.

Development priorities in the local development plan

Newport City Council published its revised deposit local development plan¹²⁹ in June 2013 for public consultation. Submission of the plan to the Welsh Government is timetabled for December 2013. An examination in public into the local development plan is anticipated to take place during spring 2014, with adoption of the plan in winter 2014.

¹²⁷ <http://www.euro.who.int/en/health-topics/environment-and-health/noise/publications/2009/night-noise-guidelines-for-europe>

¹²⁸ <http://wales.gov.uk/topics/planning/policy/tans/tan11/?lang=en>

¹²⁹ http://www.newport.gov.uk/_dc/index.cfm?fuseaction=planning.ldb&contentid=cont655634

In accordance with *Planning Policy Wales*¹³⁰ the revised deposit local development plan sets out detailed policies that allow for the assessment of noise impacts on the local environment and residential amenity, and seek to ensure that development proposals do not result in noise levels that are unacceptable given the surrounding land uses. The noise action plan will provide supporting information for assessing the impact of proposed developments on identified quiet areas.

The local development plan also protects **environmental spaces**, which are areas of open and amenity space identified for a number of reasons including biodiversity, recreation and amenity. Identified quiet areas can overlap with allocated environmental spaces and provide an additional layer of protection to the areas.

How noise will be taken into account by the local planning authority when granting permission for new developments

In accordance with *Planning Policy Wales*, relevant Technical Advice Notes and policies in the adopted *Newport Unitary Development Plan*¹³¹, the impact of noise is considered in the determination of planning applications. In consultation with Newport's environmental health department and, where relevant, Natural Resources Wales, the suitability of noise levels resulting from proposed developments given the surrounding land uses is assessed through an approved methodology. Where considered appropriate, noise mitigation measures are required and secured through the use of planning conditions. Where mitigation is not possible and noise levels are considered to be unacceptable, planning permission is refused.

Quiet areas and priority areas

Candidate quiet areas in Newport have been proposed by identifying suitable open green spaces and recreation spaces within the agglomeration boundary. A consultation with local elected Members has also been undertaken in order to identify areas valued by local communities. The suitability of nominations was assessed against tranquillity criteria, levels of use and facilities for community and recreational use along with historical, botanical and wildlife biodiversity.

Areas falling outside the agglomeration boundary, though ineligible for formal quiet area designation under the Directive and the Regulations, will be noted and information on them provided to development services, with a database of such areas being created in order to ensure their protection.

The "StreetScene" service area of Newport City Council, which includes highways, is working closely with contractors who promote the use of modern surfacing techniques to reduce road traffic noise. This approach is not currently focused on particular areas of the authority but is authority-wide.

¹³⁰ <http://wales.gov.uk/topics/planning/policy/ppw/?lang=en>

¹³¹ <http://www.newport.gov.uk/dc/index.cfm?fuseaction=planning.udp>

Under the Local Government Borrowing Initiative Newport City Council has received additional funding to undertake highway maintenance. The works carried out under this initiative will include the use of modern thin surfacing which will reduce road traffic noise.

Once Newport's noise action planning priority areas have been fully designated following analysis of the second round of noise maps, the council will examine how future phases of planned resurfacing works and other noise mitigation works may take these areas into account.

10.3 Caerphilly County Borough Council

The information in this section has been provided by Caerphilly County Borough Council.

Noise priorities and services

Noise complaints received by Caerphilly County Borough Council are investigated by the environmental health department within the council's public protection division. When noise complaints are received, they are categorised as domestic or commercial/industrial and then passed to the appropriate team for investigation. Domestic complaints are investigated by the general team and any commercial complaints are investigated by pollution control. Specific noise procedures are followed. Any complaints that cannot be resolved during the daytime or by a series of planned monitoring visits after office hours are then included on the authority's call-out list on the out-of-hours service.

The out-of-hours service is primarily an emergency response service. However, where noise complaints cannot be resolved, or if a subject has been served with a noise abatement notice, these cases are included as part of the service. The person affected by the nuisance can then call a number which connects them to the council's 24-hour control room, the control room operatives will contact the on-call environmental health officer and a visit will be made to investigate the complaint. Any noise complaints received by the control room that are not included on the call-out list are passed through to an officer for investigation the next working day.

During the 2011/12 financial year Caerphilly County Borough Council received 1,785 complaints relating to noise. Commercial noise complaints equated to 392 and the remainder (1,393) were domestic neighbour noise complaints. The majority of neighbour noise complaints relate to disturbance from amplified music and barking dogs.

In respect of service requests the pollution control service is reactive in nature. However, proactive work to minimise disturbance from noise and vibration is undertaken through the planning and licensing regimes.

Environmental health works closely with partner agencies such as the police, community safety and tenancy enforcement to ensure that noise associated with antisocial behaviour is tackled in a holistic manner. Partnership working with agencies such as Gwent Police has allowed Caerphilly County Borough Council to play important roles in planned multi-agency operations, such as “Operation Check”, where unannounced visits are made to licensed premises and issues such as noise, antisocial behaviour, underage sales, substitution and counterfeit alcohol checks, etc. are addressed.

Some of the noise complaints received by the general team relate to noise from boy racers misusing the town centre roads and playing loud music through their car stereos. Various departments of the council, including environmental health, have participated in some very successful multi-agency initiatives with Gwent Police and South Wales Fire and Rescue Service to promote issues such as noise nuisance, illegal modifications, speeding and safe driving. The 2009 initiative, “COWs, Cars and Cruisers”, ended with a road closure order through one of the town centres on a Thursday night from 7 pm through to 4 am on the Friday morning. Complaints relating to noise in this area have decreased significantly.

Development priorities in the local development plan

The *Caerphilly County Borough Local Development Plan*¹³² was adopted on 23 November 2010 and contains a number of environmental protection policies that consider amenity and design, namely CW2 (*Amenity*), CW15 (*General Locational Constraints*) and CW19 (*Locational Constraints – Rural Development and Diversification*). These policies do not relate directly to noise. However, they should be considered in conjunction with TAN11 and TAN12¹³³.

Two of the 24 key objectives within the local development plan that relate indirectly to noise are to:

- ensure that the environmental impact of all new development is minimised; and
- protect and enhance the overall quality of the historic, natural and built environment of the county borough.

Environmental health worked very closely with the strategic planning department in the production of the local development plan and any candidate sites that were likely to be affected by noise from traffic or industrial activity would have been highlighted prior to adoption. Appendix 8 of the local development plan, *Survey Requirements for Housing Sites*, lists those sites that will require acoustic assessments, whether they be BS 4142 or TAN11-type assessments. Where the assessments indicate that noise is a problem and mitigation cannot be adequately designed to address the noise, environmental health would recommend refusal of the application.

¹³² <http://www.caerphilly.gov.uk/site.aspx?s=II4xD9rWeG1MUotTU2yIq6z6LyYcH5+X>

¹³³ <http://wales.gov.uk/topics/planning/policy/tans/tan12/?lang=en>

In conclusion, whilst noise is not specifically addressed in the local development plan, when the plan is read in conjunction with national guidance the issue of noise is appropriately addressed.

Tranquil green space

Approximately 80% of Caerphilly County Borough is countryside. Many of the quiet green areas lie outside the settlement boundaries, where there is little development pressure, and these areas are protected from inappropriate development by various policies in the local development plan.

There are two large country parks in the south-eastern area of the borough, namely Sirhowy Valley Country Park and Cwmcarn Scenic Drive. Both these have extensive areas of forestation that offer screening to the impacts of noise.

The *Countryside and Rights of Way Act 2000*¹³⁴ enshrines access to common and open access land and this includes extensive areas at Mynydd Maen, Mynydd y Lan and Mynydd Machen. Caerphilly County Borough Council is currently developing proposals jointly with Torfaen and Newport for Twmbarlwm and Mynydd Maen to increase recreational usage of these areas.

To summarise, in this area of the county borough there are large areas of easily accessible land close to the centres of population where people can freely go to experience particularly pleasant areas of peace and tranquillity in an outstanding landscape setting. For these reasons, Caerphilly County Borough Council has not nominated any candidate quiet areas within the boundary of the agglomeration.

How noise will be taken into account by the local planning authority when granting permission for new developments

As a consultee, the pollution control team provides professional advice to the planning department / planning committee on the impact of new developments and also recommends conditions that should be added to consents in order to protect public health. Conditions and recommendations take into account the existing noise climate and provide protection to the amenity of existing or future residents. The process also provides officers with the opportunity to require site-specific noise surveys to ensure that any changes in an area do not give rise to disturbance or statutory nuisance.

In relation to developments that require protection from transportation noise, officers in the pollution control team will ensure that the developments comply with guidance and standards such as the World Health Organization guidelines, BS 4142 and TAN11. Where these guidelines/standards cannot be met, pollution control will recommend appropriate conditions to mitigate the

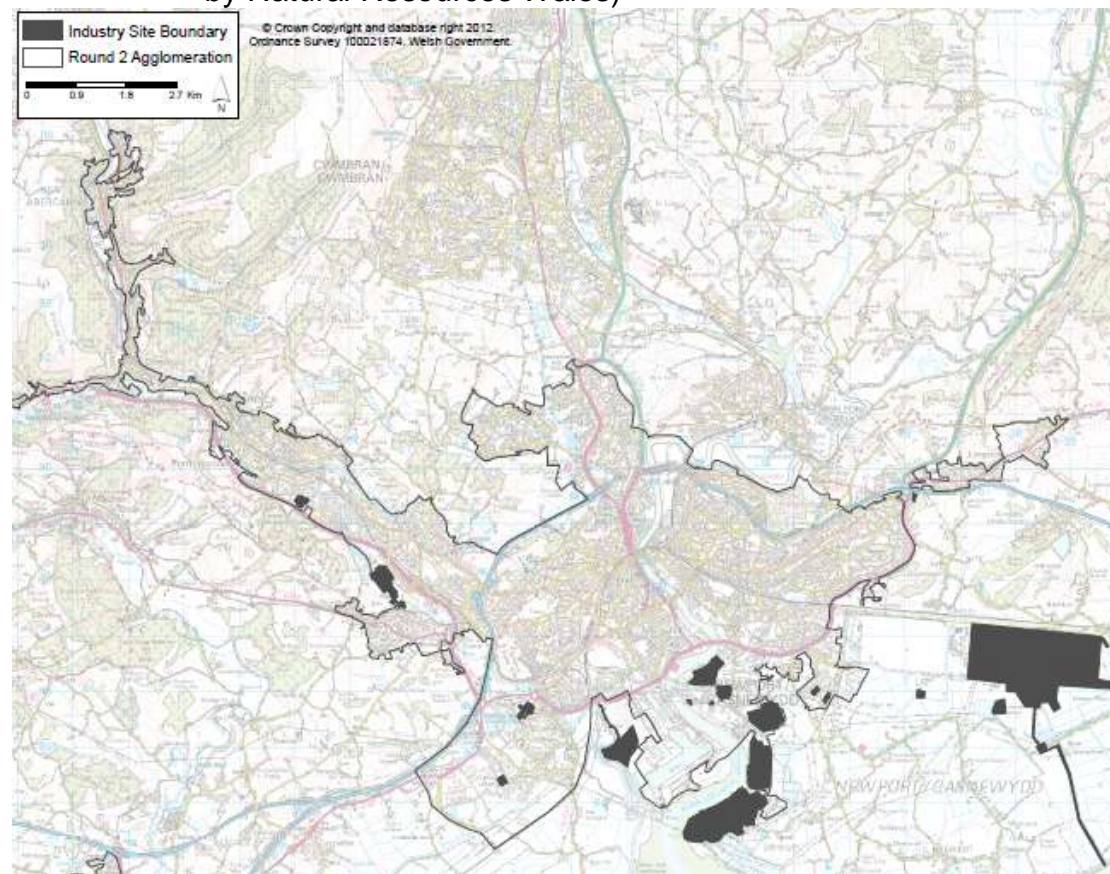
¹³⁴ <http://www.legislation.gov.uk/ukpga/2000/37>

noise and protect future occupiers, or recommend that a development be refused on noise grounds.

10.4 Major industry

Noise from existing sources affecting new noise-sensitive developments is best addressed through appropriate conditions at the planning stage rather than after construction has already gone ahead. For the convenience of developers and planners considering whether they need to consult regulators or site operators on such matters, Figure 18 shows the locations of the industrial sites in or near the Newport agglomeration that are subject to integrated pollution prevention and control, at the time of the 2012 noise mapping. However, smaller, more localised industrial noise sources will also need to be considered.

Figure 18 Major industry in or near the Newport agglomeration (map produced by Extrium Limited with the aid of information provided by Natural Resources Wales)



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

10.5 Actions and long-term strategy

a) Newport City Council will:

- i) produce noise policies for its local development plan;
- ii) protect designated quiet areas and other tranquil green spaces identified as being important outside the agglomeration boundary; and
- iii) take priority areas into consideration in its road resurfacing work

so as to reflect the statements in section 10.2 of this action plan.

b) Caerphilly County Borough Council will continue to address noise issues in accordance with the statements in section 10.3 of this action plan.

c) Natural Resources Wales will take into consideration priority areas, designated quiet areas and other tranquil urban areas when determining permits for industrial sites.

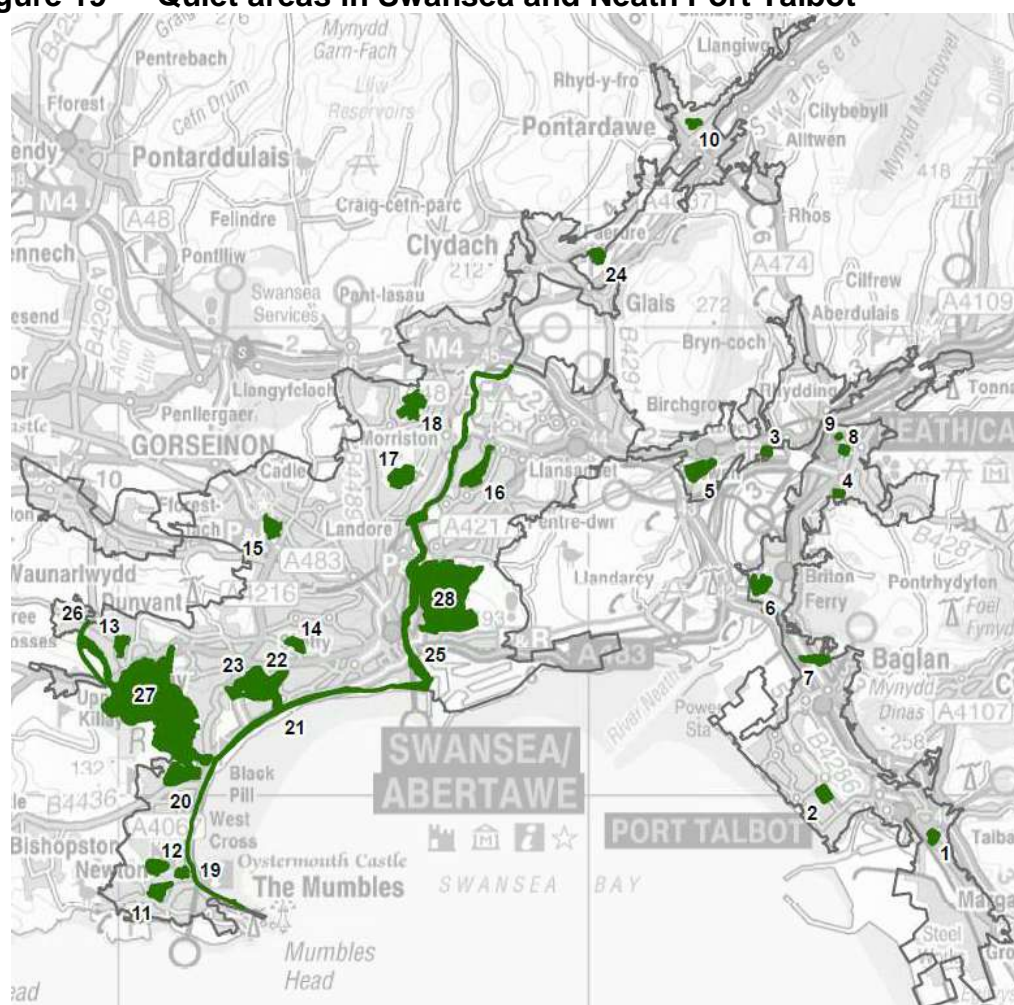
11 The Swansea and Neath Port Talbot agglomeration

11.1 Overview

There are 28 quiet areas in this agglomeration:

- | | |
|---------------------------|--------------------------------|
| 1 – Talbot Memorial Park | 15 – Ravenhill Park |
| 2 – Vivian Park | 16 – Fendrod Lake |
| 3 – Neath Abbey Ruins | 17 – Parc Llewelyn |
| 4 – Mount Pleasant Park | 18 – Morriston Park |
| 5 – Skewen Park | 19 – Oystermouth Castle |
| 6 – Shelone Woods | 20 – Clyne Gardens |
| 7 – Baglan Park | 21 – Swansea Beach |
| 8 – Victoria Gardens | 22 – Brynmill Park |
| 9 – Church Place | 23 – Singleton Park |
| 10 – King George V Park | 24 – Coed Gwilym Park |
| 11 – Underhill Park | 25 – Tawe Riverside |
| 12 – Oystermouth Cemetery | 26 – Clyne Cycle Track |
| 13 – Duvant Park | 27 – Clyne Valley Country Park |
| 14 – Cwmdonkin Park | 28 – Swansea Urban Woodland |

Figure 19 Quiet areas in Swansea and Neath Port Talbot



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

In addition to its tranquil green spaces, the agglomeration has various tranquil indoor spaces that are free for people to enter to escape the hustle and bustle of the urban environment. They offer a place of refuge that complements the outdoor quiet areas. In Swansea many of these indoor tranquil places are situated in the Maritime Quarter, adjacent to the busy city centre, and include the National Waterfront Museum, Swansea Museum, the Dylan Thomas Centre and the central library.

The results of the second round of noise mapping for the agglomeration in population terms are given in Tables 11 and 12. They were derived using 2011 census data, whereas the results of the first round of noise mapping used 2001 census data.

Table 11 Population exposure using the day-evening-night noise indicator L_{den} (out of a total population of 285,400)

Noise source	Number of people exposed to these noise levels				
	55-59 dB	60-64 dB	65-69 dB	70-74 dB	> 75 dB
Major roads	39,000	21,600	10,700	7,100	1,000
All mapped roads	52,100	40,100	29,100	9,600	1,100
Major railways	3,400	2,400	1,500	400	0
All mapped railways	4,000	3,000	1,500	400	0
Industry	4,100	500	100	0	0

Table 12 Population exposure using the night-time noise indicator L_{night} (out of a total population of 285,400)

Noise source	Number of people exposed to these noise levels				
	50-54 dB	55-59 dB	60-64 dB	65-69 dB	> 70 dB
Major roads	31,900	14,200	9,400	1,500	500
All mapped roads	47,000	35,600	12,900	1,500	500
Major railways	3,000	2,000	1,100	100	0
All mapped railways	3,600	2,300	1,100	100	0
Industry	2,400	300	100	0	0

11.2 The City and County of Swansea

The information in this section has been provided by the City and County of Swansea.

Noise priorities and services

Enquiries about noise-related problems can be dealt with by a number of sections in the council. Most noise enquiries are dealt with by a pollution control team which receives about 5,000 complaints a year. Over 1,000 complaints a year are received outside normal working hours and are dealt with by the on-call team. A wide variety of noise issues is dealt with, including vibration problems caused by traffic, industrial and commercial sources.

The spread of noise sources within Swansea is fairly typical for a city, with amplified music usually generating the most complaints, followed by barking dogs. Entertainment noise generates the third most common category which is a reflection of the scale of the night-time economy. Nearly 200 complaints a year are caused by misfiring alarm systems, both intruder alarms and smoke alarms.

Swansea has employed specialist noise control officers since the mid-1970s and has provided a 24-hour, seven days a week service since the 1980s. A large noise abatement zone was declared in the late 1970s but this work was abandoned during the early 1980s as it was found to be unworkable in the city centre.

The level of noise work in Swansea is reflected in the council's enforcement policy, with a large number of notices being served and followed through the court system. It is not unusual to serve more than 250 noise abatement notices in a year and prosecute about 50 of those notices. Fortunately the majority accept a caution in the first instance, and few need a subsequent prosecution.

After careful consideration, it was decided not to use fixed penalty notices for noise offences. The priority was to secure the longer-term resolution of these problems, and for this reason it was considered more appropriate to use the statutory nuisance procedure. This may take a little longer, but there are few repeat offenders and it is important to reduce the confrontation between neighbours over the longer term.

Licensed premises, particularly in the city centre, cause a considerable number of noise complaints. There is frequent and regular liaison with the licensing section and a noise specialist will often give evidence to the licensing committee. Considerable effort is made around large outdoor events in Swansea, which can and do give rise to noise complaints, and there is close liaison with safety advisory groups as well as with the licensing team. Much has been learnt about the nature of sound propagation around some of the regular large venues in parks and stadia. This is fed into design discussions whenever these venues are being developed or changed for any reason.

The pollution control team has the capability to measure noise and vibration to a high standard. The team is fully equipped for the measurement of party walls and party floors, building façades, industrial or building services vibration problems, fast Fourier transform frequency analysis, occupational noise dose and air overpressure from blasting.

The enforcement of the *Control of Noise at Work Regulations 2005*¹³⁵ is a matter of concern in premises regulated by the local authority. This is a particular area of interest given concerns over the night-time economy and the

¹³⁵ <http://www.legislation.gov.uk/uksi/2005/1643>

level of competition in some sectors to attract a young clientele. There is quantitative evidence in Swansea that staff and the public are over-exposed to noise in this sector. Clearly this is a public health concern alongside the obvious impact on city centre residents.

Transportation noise has been an issue historically, with problems around the airport and night-time problems around railway activities. Currently the airport is no longer a noise issue due to very low levels of activity, but late-night train servicing is still an issue receiving attention. Given the impact of the Environmental Noise Directive ("the Directive"), transportation noise will now receive far more attention than previously, particularly in relation to road traffic noise. Currently the program for highway improvements is being examined to see which schemes would bring a noise reduction benefit to the greatest number of residents. Clearly all resurfacing work reduces road noise but this could be optimised by comparing the range of materials currently used and looking for mutual benefits against other parameters such as cost and resilience. It is hoped that the electrification of the rail network in south Wales will bring the additional benefit of reduced noise to some locations. This is of particular interest around the Swansea terminus for the high-speed trains where late-night servicing and cleaning takes place very close to residential areas.

Many of the same local authority staff are involved in local air quality management and noise action plan delivery. There are synergies between the actions required to reduce nitrogen dioxide concentrations and those required to reduce road traffic noise. Usually the worst affected areas are matching and the overall need to keep traffic moving at a sensible pace, minimising sharp braking and acceleration, will benefit both air quality and noise action plans. Councils in Wales will be reporting jointly on local air quality and environmental noise, and this is something that the City and County of Swansea supports as it is important that improvements in one medium do not adversely affect the other.

There is a strong commitment by the pollution control team to use the planning development control process and provide expert evidence at planning inquiries when necessary. There is good liaison between the pollution control team and the planning service, this being considered a high priority to minimise any future noise problems due to poor design.

Planning for new development

The environmental health and planning sections of the City and County of Swansea work closely together when considering noise-related planning applications. In this way, details on existing noise levels, predicted noise impacts and noise control measures inform planning decisions. Noise control is achieved through the use of planning conditions or, where appropriate, by securing developer contributions for noise mitigation measures.

All planning decisions are made in accordance with the *City and County of Swansea Unitary Development Plan*¹³⁶, unless material considerations indicate otherwise. The unitary development plan contains design and environmental protection policies that can be used to consider the impact of noise. These include a specific policy aimed at minimising the impact of noise and other forms of pollution as a result of new developments, namely policy EV40 (*Air, Noise and Light Pollution*). There are also policies that seek to avoid causing noise nuisance through the design and siting of new development, specifically policies EV1 (*Design*) and EV2 (*Siting and Location*). Furthermore, the unitary development plan contains policy HC17 (*Planning Obligations*), which enables agreements for developers' contributions to be reached for appropriate mitigating measures, including noise reduction measures.

Policy EV40 (*Air, Noise and Light Pollution*)

Development proposals will not be permitted that would cause or result in significant harm to health, local amenity, natural heritage, the historic environment or landscape character because of significant levels of air, noise or light pollution.

Swansea's local development plan is currently at the pre-deposit stage of preparation. A draft "Preferred Strategy"¹³⁷ has been produced and should be finalised by December 2013. As part of the preparation of the Preferred Strategy a topic paper on environmental constraints and pollution¹³⁸ has been produced. This topic paper, together with the noise action plan for Wales, will be part of the evidence base for the local development plan. Accordingly, allocations for noise-sensitive developments in the local development plan will, wherever possible, be located away from existing sources of significant noise, and potentially noisy development will be located in areas where noise is less of a consideration or where its impact can be minimised.

The designated quiet areas in Swansea occupy areas identified in Swansea's open space assessment. This extensive assessment seeks to identify the amount and distribution of open space throughout the urban area and determine areas of deficiency and surplus that might be addressed through the local development plan. Various types of open space are valued for different reasons, including for quiet contemplation, and will be afforded an appropriate level of protection in the new plan.

¹³⁶ <http://www.swansea.gov.uk/index.cfm?articleid=20475>

¹³⁷ <http://www.swansea.gov.uk/index.cfm?articleid=51877>

¹³⁸ <http://www.swansea.gov.uk/index.cfm?articleid=50163>

11.3 Neath Port Talbot County Borough Council

The information in this section, including the content of Box 20, has been provided by Neath Port Talbot County Borough Council.

Noise priorities and services

Noise-related service requests are investigated by two general environmental health teams, each team being responsible for reacting to service requests within their area of the borough. During 2011/12, 553 requests for service were made in relation to noise nuisance, the most common sources of annoyance being music and barking dogs in the domestic situation.

Noise complaints are many and varied and range from domestic noise to commercial/industrial noise and noise from construction sites. The authority endeavours to resolve matters amicably at first, but when required formal legal action is utilised as determined by statute and procedures within the authority's adopted noise control policy.

In addition to undertaking investigations regarding noise complaints, the general environmental health teams are also consultees under planning and licensing legislation, for example in respect of licences such as temporary event notices and premises licences issued under the *Licensing Act 2003*¹³⁹. Over a recent six-month period, 55 planning and 198 licensing consultations were received by the teams.

Being consultees provides officers with an opportunity to scrutinise applications and the information provided to support applications. Officers regularly recommend the attachment of planning and licensing conditions following consultations, and it is not uncommon for officers to require additional information regarding noise and its possible impact from a particular development.

The authority does not provide a dedicated out-of-hours noise service, although an emergency out-of-hours officer may react to requests in situations where an abatement notice is in force. In an effort to investigate complaints outside office hours, officers on a rota utilise noise monitoring equipment and also undertake proactive out-of-hours visits.

Priority areas, quiet areas and tranquil urban green space

The engineering/transport section of Neath Port Talbot County Borough Council has a prioritised programme of resurfacing roads with quieter surfacing materials and currently spends up to £1.2 million per year. The A474 in Neath has been prioritised for resurfacing work, bearing in mind that there

¹³⁹ <http://www.legislation.gov.uk/ukpga/2003/17>

is an identified noise action planning priority area on the route, and this will assist in reducing the current levels of traffic noise.

The completion of the Peripheral Distributor Road through less populated areas of Port Talbot, planned for October 2013, will remove through traffic from residential areas alongside the A48 and enable the Welsh Government to look at improved traffic movements along the raised section of the M4. Consideration is being given to closing some of the existing slip roads, which would further improve traffic flow along the motorway.

The local authority noise action planning priority area identified on the A48 (Talbot Road) will be subject to reduced traffic flow and an accompanied noise reduction upon completion of the Peripheral Distributor Road. There will be additional benefits to residents within the designated air quality management area situated between Port Talbot and the Margam area owing to the associated reduction in vehicle emissions.

In relation to planning, noise action planning priority areas and other noise hotspots on the noise maps will be taken into account when decisions are made about the location of new noise-sensitive developments. When allocations are put forward through the development planning process such developments will, where possible, be located away from identified sources of noise pollution. Where planning applications for noise-sensitive developments in proximity to priority areas are received, measures will be required to ensure that noise levels experienced within or around the new developments are limited.

Similarly, allocations for potentially noisy developments identified through the development plan process will take into account the location of designated quiet areas, avoiding such areas where possible and ensuring that any impacts are minimised. Planning applications for potentially noisy developments will be assessed in relation to their likely effects on quiet areas in accordance with planning policy, avoiding such areas where possible or otherwise requiring measures to be taken to ensure that no detrimental effects are caused.

Relatively tranquil urban green spaces generally will be dealt with in a similar way to designated quiet areas when proposals for potentially noisy developments are being assessed. Green spaces within urban areas are generally protected for their recreational and ecological value, with any proposals for loss of green areas being assessed in relation to the general provision in the area, the wider amenity value of the site and the possibility of providing alternative or enhanced amenities, either nearby or as part of the developments.

Development priorities in the local development plan

At the time of writing, the draft deposit version of the Neath Port Talbot local development plan¹⁴⁰ has been published, giving details of the council's proposed planning policies and allocations. However, the plan is not scheduled to be adopted until 2015 following further consultation and examination in public. The overall draft strategy and development priorities can be summarised as follows:

The plan strategy sets out 25 plan objectives, grouped under five headings:

- Building healthy, sustainable communities
- Promoting a sustainable economy
- Valuing our environment
- Achieving sustainable accessibility
- Respecting distinctiveness

The plan envisages and provides for a relatively strong level of economic growth over the plan period (2011-2026). This leads to an identified need to provide for the development of 9,150 new dwellings over the plan period, together with the provision of new employment land focussed on the Baglan Bay and Junction 38 (M4) Margam strategic employment sites and the safeguarding of existing employment sites.

The overall strategy is to focus new development on the coastal corridor while reinvigorating the valley communities. Most significant new developments are consequently to be within or adjacent to the urban agglomeration area identified for noise mapping and action planning purposes under the Directive and its transposing Regulations.

How noise will be taken into account by the local planning authority when granting permission for new developments

Planning applications will be dealt with in accordance with national and local policy in relation to noise. (For national policy, see Chapter 2.)

Currently, local planning policy is set out in Neath Port Talbot's adopted unitary development plan¹⁴¹. The policies relevant to noise and related matters that are applied in dealing with planning applications are summarised in Box 20.

¹⁴⁰ <http://www.npt.gov.uk/default.aspx?page=7982>

¹⁴¹ <http://www.npt.gov.uk/default.aspx?page=1989>

Box 20: Noise-relevant policies in Neath Port Talbot's unitary development plan

ENV27 (Location of Sensitive Uses): The development of land for housing or other sensitive uses will not be permitted where the proximity of an existing use or installation or exposure to pollutants would unacceptably affect amenity, safety, health or environmental quality.

ENV28 (Polluting or Hazardous Installations): The development of polluting or hazardous installations which would create a significant adverse impact on safety, health or environmental quality will not be permitted.

ENV29 (Environmental Quality and Amenity): Proposals that would adversely affect the environmental quality or amenity of the surrounding area through causing unacceptable levels of pollution, disturbance, noise or nuisance will not be permitted.

In addition, the unitary development plan includes two general policies that refer to noise matters, GC1 and GC2. These indicate that proposals should address proximity or exposure to noise, among other amenity issues.

The local development plan will supersede the unitary development plan once adopted. At present, no specific local development plan policies have been finalised. However, in relation to the approach to determining planning applications, it is anticipated that the local development plan will incorporate a similar policy approach to the unitary development plan.

11.4 Major industry

Noise from existing sources affecting new noise-sensitive developments is best addressed through appropriate conditions at the planning stage rather than after construction has already gone ahead. For the convenience of developers and planners considering whether they need to consult regulators or site operators on such matters, Figure 20 shows the locations of the industrial sites in or near the Swansea and Neath Port Talbot agglomeration that are subject to integrated pollution prevention and control, at the time of the 2012 noise mapping. However, smaller, more localised industrial noise sources will also need to be considered.

Figure 20 Major industry in or near the Swansea and Neath Port Talbot agglomeration (map produced by Extrium Limited with the aid of information provided by Natural Resources Wales)



© Crown Copyright and database right 2012. Ordnance Survey 100021874. Welsh Government.

11.5 Actions and long-term strategy

a) The City and County of Swansea will:

- i) seek to maximise the noise benefits to be gained from highway improvement works and local air quality management; and
- ii) produce noise policies for its local development plan

so as to reflect the statements in section 11.2 of this action plan.

b) Neath Port Talbot County Borough Council will:

- i) take priority areas into consideration in its road resurfacing work;
- ii) take noise maps, priority areas, quiet areas and other tranquil urban green space into consideration when a noise-sensitive or noise-generating development is proposed; and
- iii) produce noise policies for its local development plan

so as to reflect the statements in section 11.3 of this action plan.

- c) Natural Resources Wales will take into consideration priority areas, designated quiet areas and other tranquil urban areas when determining permits for industrial sites.

Annex A – references

Preface – the noise action planning process

Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0049:en:NOT>

The Environmental Noise (Wales) Regulations 2006

<http://www.legislation.gov.uk/wsi/2006/2629>

The Environmental Noise (Wales) (Amendment) Regulations 2009

<http://www.legislation.gov.uk/wsi/2009/47>

1 Why noise matters

Public attitudes and environmental justice in Scotland: A report for the Scottish Executive on research to inform the development and evaluation of environmental justice policy, J Curtice, A Ellaway, C Robertson, G Morris, G Allardice and R Robertson, 2005

<http://www.scotland.gov.uk/Publications/2005/10/2791230/12310>

Estimating dose-response relationships between noise exposure and human health impacts in the UK, B F Berry and I H Flindell, July 2009

<http://archive.defra.gov.uk/environment/quality/noise/igcb/publications/healthreport.htm>

Environmental noise and health in the UK: A report by the Ad Hoc Expert Group on Noise and Health, Health Protection Agency, 2010

<http://www.hpa.org.uk/ProductsServices/ChemicalsPoisons/Environment/Noise/>

Burden of disease from environmental noise: Quantification of healthy life years lost in Europe, World Health Organization, 2011

<http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/noise/publications/2011/burden-of-disease-from-environmental-noise.-quantification-of-healthy-life-years-lost-in-europe>

Quantifying the links between environmental noise related hypertension and health effects, A Harding, G Frost, H Mason, E Tan, A Tsuchiya and N Warren, Health and Safety Laboratory, 2011

<http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=17601>

Environmental noise and cardiovascular disease – observations on a well known dose-response relationship, H E Laszlo, B E Berry, P Abbott and A L Hansell, InterNoise 2012 proceedings, August 2012

<http://ince.publisher.ingentaconnect.com/content/ince/incecip>

Annoyance from common environmental hazards: a cause for public health concern?, H Brunt and A Tomlinson, *Chemical Hazards and Poisons Report 23*, Centre for Radiation, Chemical and Environmental Hazards, September 2013

<https://www.gov.uk/government/publications/chemical-hazards-and-poisons-report-issue-23>

Welsh Transport Planning and Appraisal Guidance (WelTAG), Welsh Government, June 2008

<http://new.wales.gov.uk/topics/transport/publications/weltag/?lang=en>

Good practice guide on noise exposure and potential health effects, European Environment Agency, 2010

<http://www.eea.europa.eu/publications/good-practice-guide-on-noise>

Methodological guidance for estimating the burden of disease from environmental noise, World Health Organization, 2012

http://www.euro.who.int/_data/assets/pdf_file/0008/179117/Methodological-guidance-for-estimating-the-burden-of-disease-from-environmental-noise-ver-2.pdf

Estimating the productivity impacts of noise, P A Morgan, L Morris and M Muirhead, Transport Research Laboratory, 2011

<http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=17602>

Planning Policy Wales, Edition 5, Welsh Government, November 2012

<http://wales.gov.uk/topics/planning/policy/ppw/?lang=en>

Biodiversity: The UK Action Plan, Department of Environment, January 1994

<http://jncc.defra.gov.uk/page-5155>

Natural Environment and Rural Communities Act 2006

<http://www.legislation.gov.uk/ukpga/2006/16>

The effects of noise on biodiversity, A Radford, E Morley and G Jones, University of Bristol, 2012

<http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=18136>

The importance of invertebrates when considering the impacts of anthropogenic noise, E Morley, G Jones and A Radford, *Proceedings of the Royal Society B* 281, February 2014

<http://rspb.royalsocietypublishing.org/content/281/1776/20132683.full>

Wales Tranquil Areas Map 2009, prepared for Countryside Council for Wales by Land Use Consultants, March 2009

2 Noise and new development

Technical Advice Note (TAN) 11: Noise, National Assembly for Wales, October 1997

<http://wales.gov.uk/topics/planning/policy/tans/tan11/?lang=en>

The Building Regulations 2010 / The Building (Approved Inspectors etc.) Regulations 2010 Approved Document E: Resistance to the passage of sound, HM Government, 2003 edition incorporating 2004 and 2010 amendments

<http://www.planningportal.gov.uk/buildingregulations/approveddocuments/parte>

BS 8233:1999, *Sound insulation and noise reduction for buildings: Code of practice*

BS 5228-1:2009, *Code of practice for noise and vibration control on construction and open sites: Noise*

Noise Policy Statement for England, Defra, March 2010
<https://www.gov.uk/government/publications/noise-policy-statement-for-england>

3 Tranquil green space in the built environment

Westminster Open Spaces Noise Study 2008, S Bose and C Skinner, Scott Wilson Limited, 2009
http://www3.westminster.gov.uk/publications/publications_detail.cfm?ID=3863

Quietening Open Spaces: Towards Sustainable Soundscapes for the City of London, Environmental Protection UK, September 2010

The economic value of quiet areas, URS / Scott Wilson, March 2011
<http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=17600>

Technical Advice Note (TAN) 16: Sport, Recreation and Open Space, Welsh Assembly Government, January 2009
<http://wales.gov.uk/topics/planning/policy/tans/tan16e/?lang=en>

Climbing Higher: The Welsh Assembly Government Strategy for Sport and Physical Activity, January 2005
<http://wales.gov.uk/topics/cultureandsport/sportandactivererecreation/climbing/?lang=en>

Programme for Government, Welsh Government, 2011
<http://wales.gov.uk/about/programmeforgov/?lang=en>

Trees in the Townscape, a Guide for Decision Makers, Issue 3, Trees and Design Action Group, November 2012
<http://www.tdag.org.uk/trees-in-the-townscape.html>

The benefits of large species trees in urban landscapes: a costing, design and management guide, T Armour, M Job and R Canavan, CIRIA, 2012
<http://www.ciria.org/>

Novel solutions for quieter and greener cities, HOSANNA, January 2013
<http://www.greener-cities.eu/>

Raising the Standard: The Green Flag Award Guidance Manual, E Greenhalgh, J Newton and A Parsons, updated 2009
<http://greenflag.keepbritaintidy.org/about-us/about-green-flag-award/guidance-manual/>

Stress recovery during exposure to natural and urban environments, R Ulrich, R Simons, B Losito, E Fiorito, M Miles and M Zelson, *Journal of Environmental Psychology*, 1991

4 Road noise management

The Noise Insulation Regulations 1975

Regulation (EC) No 1222/2009 of the European Parliament and of the Council of 25 November 2009 on the labelling of tyres with respect to fuel efficiency and other essential parameters

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009R1222:EN:NOT>

Local Air Quality Management Policy Guidance for Wales: Addendum: Air quality and traffic noise, Welsh Government, 2012

<http://new.wales.gov.uk/topics/environmentcountryside/epg/airqualitypollution/airquality/guidance/laqmpg09add/?lang=en>

Determination of the potential synergies and conflicts between noise and air quality action plans, WS Atkins, March 2001

Road Safety Framework for Wales, Welsh Government, July 2013

<http://wales.gov.uk/topics/transport/roads/safety/road-safety-framework/?lang=en>

Motor Cycle Noise Act 1987

<http://www.legislation.gov.uk/ukpga/1987/34>

The Motor Cycle Silencer and Exhaust Systems Regulations 1995

<http://www.legislation.gov.uk/uksi/1995/2370>

The Road Vehicles (Construction and Use) Regulations 1986

<http://www.legislation.gov.uk/uksi/1986/1078>

Night Noise Guidelines for Europe, World Health Organization, 2009

<http://www.euro.who.int/en/health-topics/environment-and-health/noise/publications/2009/night-noise-guidelines-for-europe>

One Wales: Connecting the Nation: The Wales Freight Strategy, Welsh Government, May 2008

<http://wales.gov.uk/topics/transport/freight/wfs/?lang=en>

Active Travel (Wales) Act 2013

<http://www.legislation.gov.uk/anaw/2013/7>

5 Railway noise management

EU's Future Noise Policy, WG2 – Dose/Effect: Position paper on dose response relationships between transportation noise and annoyance, European Commission, February 2002

http://ec.europa.eu/environment/noise/pdf/noise_expert_network.pdf

The railway noise bonus: Discussion paper on the noise annoyance correction factor, International Union of Railways, UIC, November 2010

http://www.uic.org/IMG/pdf/the_railway_noise_bonus_report_2_.pdf

The Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996

<http://www.legislation.gov.uk/uksi/1996/428>

Responding to the Environmental Noise Directive by demonstrating the benefits of rail grinding on the GB railway network, N Craven, O Bewes, B Fenech and R Jones, Rail Research UK Association Annual Conference proceedings, November 2012

<http://www.networkrail.co.uk/improvements/reducing-track-noise/>

Implementation of the Environmental Noise Directive (END) in Wales – noise mapping and action planning for major roads, railways and agglomerations: project technical note – electrification in south Wales, M Burdett, R Jones and S Shilton, Extrium Limited, July 2013

<http://new.wales.gov.uk/topics/environmentcountryside/epq/noiseandnuisance/environmentalnoise/noisemonitoringmapping/second-round-results/?lang=en>

6 Industrial noise management

BS 4142:1997, *Method for rating industrial noise affecting mixed residential and industrial areas*

The Environmental Permitting (England and Wales) Regulations 2010

<http://www.legislation.gov.uk/ukdsi/2010/9780111491423>

Environmental Protection Act 1990

<http://www.legislation.gov.uk/ukpga/1990/43>

7 Noisy neighbourhoods

Noise Act 1996

<http://www.legislation.gov.uk/ukpga/1996/37>

Improving Environmental Health Services in Wales: Best Practice Standards 2010/11, Wales Heads of Environmental Health Group, 2010

Control of Pollution Act 1974

<http://www.legislation.gov.uk/ukpga/1974/40>

Live Music Act 2012

<http://www.legislation.gov.uk/ukpga/2012/2>

Licensing Act 2003

<http://www.legislation.gov.uk/ukpga/2003/17>

Sound Advice on Noise, Welsh Assembly Government, 2010

<http://wales.gov.uk/topics/environmentcountryside/epq/noiseandnuisance/noiseact/soundadvice/?lang=en>

Code of Practice on Noise from Ice-Cream Van Chimes Etc. 1982

Town and Country Planning Act 1990

<http://www.legislation.gov.uk/ukpga/1990/8>

Code of Practice on Environmental Noise Control at Music Concerts, The Noise Council, 1995

http://www.cieh.org/policy/noise_council_environmental_noise.html

Criminal Justice and Public Order Act 1994

<http://www.legislation.gov.uk/ukpga/1994/33>

Anti-social Behaviour Act 2003

<http://www.legislation.gov.uk/ukpga/2003/38>

Clean Neighbourhoods and Environment Act 2005

<http://www.legislation.gov.uk/ukpga/2005/16>

8 Other forms of noise

The Assessment and Rating of Noise from Wind Farms (ETSU-R-97),

Department of Trade and Industry, September 1996

<http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/energy/sources/renewables/explained/wind/onshore-offshore/page21743.html>

Technical Advice Note (TAN) 8: Planning for Renewable Energy, Welsh

Assembly Government, July 2005

<http://wales.gov.uk/topics/planning/policy/tans/tan8/?lang=en>

Analysis of How Noise Impacts are Considered in the Determination of Wind Farm Planning Applications, Hayes McKenzie Partnership Ltd, April 2011

<https://www.gov.uk/government/publications/analysis-of-how-noise-impacts-are-considered-in-the-determination-of-wind-farm-planning-applications>

A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise, Institute of Acoustics, May 2013

<http://www.ioa.org.uk/about-us/news-article.asp?id=270>

Minerals Planning Policy Wales, National Assembly for Wales, December 2000

<http://wales.gov.uk/topics/planning/policy/minerals/mineralsplanning/?lang=en>

Minerals Technical Advice Note 1: Aggregates, Welsh Assembly Government, March 2004

<http://wales.gov.uk/topics/planning/policy/mineralstans/2888891/?lang=en>

Minerals Technical Advice Note 2: Coal, Welsh Assembly Government, January 2009

<http://wales.gov.uk/topics/planning/policy/mineralstans/2877461/?lang=en>

Minerals Planning Guidance (MPG) 11: The Control of Noise at Surface Mineral Workings, Department of the Environment / Welsh Office, April 1993

<http://wales.gov.uk/topics/planning/policy/mpgnotes/mpg11/?lang=en>

The Control of Noise at Work Regulations 2005

<http://www.legislation.gov.uk/uksi/2005/1643>

Directive 2003/10/EC of the European Parliament and of the Council of 6 February 2003 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise)

<http://www.legislation.gov.uk/uksi/2005/1643>

The Management of Health and Safety at Work Regulations 1999

<http://www.legislation.gov.uk/uksi/1999/3242>

9 The Cardiff and Penarth agglomeration

Cardiff Local Development Plan 2006-2026: Deposit Plan, Cardiff Council, September 2013

http://www.cardiff.gov.uk/content.asp?nav=2870,3139,5845,6822&parent_directory_id=2865

Residents Survey 2011-2012, prepared for the Vale of Glamorgan Council by Beaufort Research, May 2012

Vale of Glamorgan Local Development Plan 2011-2026: Open Space Background Paper, Vale of Glamorgan Council, September 2013

http://www.valeofglamorgan.gov.uk/en/living/planning_and_building_control/planning_policy/local_development_plan/deposit_ldp_and_supporting_documents_2013.aspx

Vale of Glamorgan Local Development Plan 2011-2026: Deposit Plan, Vale of Glamorgan Council, November 2013

http://www.valeofglamorgan.gov.uk/en/living/planning_and_building_control/planning_policy/local_development_plan/deposit_ldp_and_supporting_documents_2013.aspx

10 The Newport agglomeration

Newport Local Development Plan 2011-2026: Revised Deposit Plan, Newport City Council, June 2013

<http://www.newport.gov.uk/dc/index.cfm?fuseaction=planning.ldp&contentid=cont699414>

Newport Unitary Development Plan 1996-2011: Adopted Plan, Newport City Council, May 2006

<http://www.newport.gov.uk/dc/index.cfm?fuseaction=planning.udp>

Caerphilly County Borough Local Development Plan up to 2021, Caerphilly County Borough Council, adopted November 2010

<http://www.caerphilly.gov.uk/site.aspx?s=II4xD9rWeG1MUotTU2ylg6z6LyYcH5+X>

Technical Advice Note (TAN) 12: Design, Welsh Assembly Government, June 2009

<http://wales.gov.uk/topics/planning/policy/tans/tan12/?lang=en>

Countryside and Rights of Way Act 2000

<http://www.legislation.gov.uk/ukpga/2000/37>

11 The Swansea and Neath Port Talbot agglomeration

City and County of Swansea Unitary Development Plan, adopted November 2008

<http://www.swansea.gov.uk/index.cfm?articleid=20475>

Swansea Local Development Plan: Preferred Strategy, City and County of Swansea, July 2013

<http://www.swansea.gov.uk/index.cfm?articleid=51877>

Swansea Local Development Plan: Topic Paper: Pollution and Environmental Constraints, City and County of Swansea, 2013

<http://www.swansea.gov.uk/index.cfm?articleid=50163>

Local Development Plan: Deposit Plan, Neath Port Talbot County Borough Council, August 2013

<http://www.npt.gov.uk/default.aspx?page=7982>

Unitary Development Plan, Neath Port Talbot County Borough Council, adopted March 2008

<http://www.npt.gov.uk/default.aspx?page=1989>

Annex B – list of actions and long-term strategy

Preface – the noise action planning process

- a) The Welsh Government will host meetings open to all bodies having responsibilities under this action plan at least twice yearly during the lifetime of the plan, to review progress in relation to actions and long-term strategy.
- b) The Welsh Government will update the plan itself as and when it deems necessary, including carrying out at least one review incorporating a full public consultation no more than five years after its first adoption.

1 Why noise matters

- a) The Welsh Government will:
 - i) continue to engage actively with research at a UK level primarily through the Defra-led noise and nuisance evidence programme, seeking to influence it to ensure that it meets the needs of Wales and providing support to the management of individual contracts where appropriate;
 - ii) maintain a list of noise contacts in public authorities across Wales;
 - iii) keep noise contacts in public authorities across Wales informed of any significant new research findings, guidance or standards relevant to their roles; and
 - iv) work with the Centre for Radiation, Chemical and Environmental Hazards when Public Health England is in a position to deliver its proposed strategy on noise and health, which the Health Protection Agency consulted on in 2012.
- b) Public Health Wales will:
 - i) work with local authorities to capture more data to better understand the direct and indirect health impacts associated with noise-related annoyance;
 - ii) work with the Welsh Government to better quantify the health impacts of environmental noise in Wales using population exposure estimates derived from the latest strategic noise maps; and
 - iii) consider the feasibility of environmental public health tracking of noise and health data, for example in relation to educational attainment of children and adolescents or general cardiovascular health outcomes in geographically defined priority areas.
- c) Natural Resources Wales will consider whether there is a case for further rounds of rural tranquil areas mapping and the method to be used in any such mapping.

- d) At the time of writing, the Welsh Government's five-year legislative plan includes the *Future Generations (Wales) Bill* (previously the Sustainable Development Bill). Noise policy officials will liaise with the teams taking forward this work as and when appropriate to ensure an ongoing, integrated approach to policy-making.

2 Noise and new development

- a) The Welsh Government will:
 - i) in the short term, issue a clarification letter for TAN11 to highlight factual updates and cross-references to other documents;
 - ii) retain the existing noise exposure categories in TAN11 at least until such time as concepts like the "significant observed adverse effect level", "lowest observed adverse effect level" and "no observed effect level" have been sufficiently well developed that they can take their place; and
 - iii) conduct a more substantial review and update of TAN11 when the evidence indicates that this is required.
- b) While the Welsh Government's legislative programme includes the introduction of a Planning Bill, this will focus on structures and delivery mechanisms, not planning policy. Opportunities for influencing the planning agenda in relation to noise are, and will continue to be, more prevalent through the policy route.
- c) Once the Department for Education in England has published its revised *Building Bulletin 93* (BB93), the Welsh Government and the Building Regulations Advisory Committee for Wales will review the relevant sections of the *Building Regulations*. In the meantime, the Welsh Government will consider the implications of the revised acoustic standards for schools introduced in England, on which the revised BB93 is expected to be based.

3 Tranquil green space in the built environment

- a) Local planning authorities, by having regard to the relevant provisions in Welsh planning policy, will aim to protect designated quiet areas in agglomerations and other highly valued tranquil urban green spaces across Wales from an unacceptable increase in noise levels arising from transport and industry.
- b) Natural Resources Wales will continue the work of the Countryside Council for Wales, mapping urban green spaces across Wales and providing this data to local authorities to help them bring their existing green space inventories up to date. In particular, Natural Resources Wales will disseminate a new geographic information system (GIS) data set to local authorities by the end of 2013 that will show potentially accessible natural green space across Wales according to the former Countryside Council for Wales criteria. This will enable local authorities

to bring their own green space assessments across onto a modern base map that will be easier for them to update. Natural Resources Wales will assist local authorities in keeping this data set up to date as land use changes.

- c) The Welsh Government, in developing an integrated local environment improvement package for communities, will, where appropriate, continue to offer grants to local authorities for tranquil urban green space improvement projects, particularly in deprived areas.
- d) The Welsh Government, in consultation with Natural Resources Wales and local authorities in agglomerations, will review each quiet area that has failed to achieve Green Flag status no later than five years after its designation as a quiet area, to determine whether it still warrants that designation or should have it revoked.
- e) Natural Resources Wales will continue to work with the Green Flag sub-licence holder for Wales, Keep Wales Tidy, to ensure that judges trained in Wales have a proper understanding of tranquillity as it relates to the Green Flag Awards.
- f) At the time of writing, the Welsh Government's five-year legislative plan includes the *Environment (Wales) Bill*, which will provide for a more integrated management of the environment in Wales. Noise policy officials will liaise with the teams taking forward this work as and when appropriate to ensure an ongoing, integrated approach to policy-making.

4 Road noise management

- a) The Welsh Government will make data derived from the 2012 noise maps available in a form that is helpful to the authorities responsible for managing road traffic noise in Wales.
- b) The Welsh Government will consider what criteria may be most appropriate for prioritising the designated noise action planning priority areas on the motorway and trunk road network for noise mitigation works, should budgets for such interventions be available.
- c) The Welsh Government, in developing an integrated local environment improvement package for communities, will, where appropriate, continue to offer grants to local authorities for innovative and cost-effective projects to reduce people's exposure to road traffic air pollution and noise, particularly where the interventions benefit poorer communities and are linked to multiple benefits.
- d) The Welsh Government will continue with its Local Government Borrowing Initiative, which should result in up to £170 million of additional capital funding being invested in highway improvements over the three financial years from April 2012 to March 2015, and some of

these improvements such as resurfacing works will lead to noise improvements.

- e) Public authorities in Wales will investigate what other budgets may become available for specific road traffic noise mitigation interventions in designated priority areas over the next five years. Any such proposed interventions will be subject to an assessment of costs and benefits, and evaluation of their effectiveness following implementation.
- f) Public authorities in Wales will integrate their policies and programmes to reduce exposure to road traffic air pollution and noise so as to maximise the synergies and minimise the conflicts arising from those interventions and so achieve the best overall public health outcome.
- g) Work undertaken to deliver the *Wales Freight Strategy* will be consistent with the road traffic noise policies in this action plan.
- h) The Welsh Government will implement any changes to speed limits on the trunk road network following the speed limit review.
- i) The Welsh Government will explore opportunities to increase public awareness of the need for more considerate driving behaviour on Welsh roads generally.
- j) The Welsh Government will seek to identify cost-effective options for government delivery and support for the low carbon vehicle sector, and to promote the uptake of low carbon vehicles to the public estate and business sectors.
- k) The *Active Travel (Wales) Act 2013* will come into force in mid-2014. It creates new duties for highways authorities to consider the needs of walkers and cyclists and make better provision for them. It also requires both the Welsh Government and local authorities to promote walking and cycling as a mode of transport. By connecting key sites with active travel routes, the Act will encourage people to rely less on their cars when making short journeys.

5 Railway noise management

- a) The Welsh Government will review the location of designated priority areas in light of the anticipated changes following electrification.
- b) Where budgets for noise mitigation works on the railways are identified by responsible bodies with Great Britain remits in response to the Directive, designated priority areas in Wales will continue to be considered on an equitable basis with “important areas” in England and “noise management areas” in Scotland. Any such proposed interventions will be subject to an assessment of costs and benefits, and evaluation of their effectiveness following implementation.

- c) The Welsh Government will continue to work with the rail industry through its noise policy working group to explore avenues for further developing railway noise policy in Great Britain over the course of the next five years.
- d) The Office of Rail Regulation will monitor Network Rail's progress in delivery of planned enhancements and renewal activity that will have a secondary benefit in terms of noise mitigation, and work with the noise policy working group and be guided by them on appropriate responses to the noise mapping carried out under the Directive.
- e) Work undertaken to deliver the *Wales Freight Strategy* will be consistent with the railway noise policies in this action plan.

6 Industrial noise management

- a) Natural Resources Wales will:
 - i) take a proportionate and risk-based approach to responding to industrial noise complaints in relation to the sites that it regulates under integrated pollution prevention and control;
 - ii) determine how best to develop its internal capacity for dealing with industrial noise issues and its working relationships with other regulators in the short, medium and long term, so that it remains properly equipped to discharge its regulatory noise responsibilities following its separation from the Environment Agency;
 - iii) continue to participate in the Environment Agency's noise sector group; and
 - iv) become a member of the All Wales EPR Link Group with immediate effect, to enable regular sharing of best practice and training opportunities with local authority industrial regulators on matters of mutual interest such as industrial noise.
- b) When a noise-sensitive development such as housing is proposed close to an industrial site subject to integrated pollution prevention and control, or when a new major industrial development is proposed close to existing noise-sensitive receptors, the local planning authority should consult the environmental regulator and/or Public Health Wales and ask them to flag up any potential issues ahead of granting or refusing planning permission.
- c) Environmental regulators will respond as appropriate to consultations on proposals for new noise-sensitive developments close to industrial sites subject to integrated pollution prevention and control.
- d) Public Health Wales, on behalf of all Health Boards in Wales, will highlight the potential public health impacts associated with new major industrial developments at the consultation stage of planning and environmental permit determinations.

- e) The Welsh Government will work through its membership of the British Standards committee on residential and industrial noise to ensure that environmental regulators in Wales get clear and appropriate technical guidance to help them do their job.

7 Noisy neighbourhoods

The Welsh Government will:

- i) consider which of the current guidance documents need to be reviewed and, where appropriate, liaise with stakeholders to update the guidance or produce new guidance;
- ii) review current practices in respect of statistical collection and analysis of neighbourhood noise complaints and consider the benefit of developing a single approach to data collection in Wales; and
- iii) consider what further research is needed in this area in liaison with other noise authorities in Wales and the wider UK.

9 The Cardiff and Penarth agglomeration

a) Cardiff Council will:

- i) protect quiet areas and address priority areas when drawing up its local development plan and supplementary planning guidance;
- ii) give consideration to noise-generating and noise-sensitive development proposals; and
- iii) take priority areas into consideration in its road resurfacing work

so as to reflect the statements in section 9.2 of this action plan.

- b) The Vale of Glamorgan Council will continue to address noise issues in accordance with the statements in section 9.3 of this action plan.
- c) Natural Resources Wales will take into consideration priority areas, designated quiet areas and other tranquil urban areas when determining permits for industrial sites.

10 The Newport agglomeration

a) Newport City Council will:

- i) produce noise policies for its local development plan;
- ii) protect designated quiet areas and other tranquil green spaces identified as being important outside the agglomeration boundary; and
- iii) take priority areas into consideration in its road resurfacing work

so as to reflect the statements in section 10.2 of this action plan.

- b) Caerphilly County Borough Council will continue to address noise issues in accordance with the statements in section 10.3 of this action plan.
- c) Natural Resources Wales will take into consideration priority areas, designated quiet areas and other tranquil urban areas when determining permits for industrial sites.

11 The Swansea and Neath Port Talbot agglomeration

- a) The City and County of Swansea will:
 - i) seek to maximise the noise benefits to be gained from highway improvement works and local air quality management; and
 - ii) produce noise policies for its local development planso as to reflect the statements in section 11.2 of this action plan.
- b) Neath Port Talbot County Borough Council will:
 - i) take priority areas into consideration in its road resurfacing work;
 - ii) take noise maps, priority areas, quiet areas and other tranquil urban green space into consideration when a noise-sensitive or noise-generating development is proposed; and
 - iii) produce noise policies for its local development planso as to reflect the statements in section 11.3 of this action plan.
- c) Natural Resources Wales will take into consideration priority areas, designated quiet areas and other tranquil urban areas when determining permits for industrial sites.

Annex C – checklist of requirements for noise action plans

The following table lists the minimum contents for an environmental noise action plan under the Environmental Noise Directive and its transposing Regulations, and where those elements may be found in this document.

Mandatory element	Action plan (for the purposes of the Directive and the Regulations)				
	Major roads	Major railways	Cardiff and Penarth	Newport	Swansea and Neath Port Talbot
A description of the agglomeration, the major roads, the major railways or major airports and other noise sources taken into account	Chapter 4	Chapter 5	Chapter 9	Chapter 10	Chapter 11
The authority responsible	Chapter 4	Chapter 5	Chapters 4-6	Chapters 4-6	Chapters 4-6
The legal context	Preface	Preface	Preface	Preface	Preface
Any limit values in place in accordance with Article 5	n/a	n/a	n/a	n/a	n/a
A summary of the results of the noise mapping	Chapter 4	Chapter 5	Chapter 9	Chapter 10	Chapter 11
An evaluation of the estimated number of people exposed to noise, identification of problems and situations that need to be improved	Chapter 4	Chapter 5	Chapter 9	Chapter 10	Chapter 11
A record of the public consultations organised in accordance with Article 8(7)	Preface	Preface	Preface	Preface	Preface

Any noise reduction measures already in force and any projects in preparation	Chapters 4 and 9-11	Chapters 5 and 9-11	Chapters 4-6 and 9	Chapters 4-6 and 10	Chapters 4-6 and 11
Actions that the competent authorities intend to take in the next five years, including any measures to preserve quiet areas	Chapters 1-4 and 9-11	Chapters 1-3, 5 and 9-11	Chapters 1-6 and 9	Chapters 1-6 and 10	Chapters 1-6 and 11
Long-term strategy	Chapters 1-4 and 9-11	Chapters 1-3, 5 and 9-11	Chapters 1-6 and 9	Chapters 1-6 and 10	Chapters 1-6 and 11
Financial information (if available): budgets, cost-effectiveness assessment, cost-benefit assessment	Chapters 3 and 4	-	Chapters 3 and 4	Chapters 3 and 4	Chapters 3 and 4
Provisions envisaged for evaluating the implementation and the results of the action plan	Preface	Preface	Preface	Preface	Preface
Estimates in terms of the reduction of the number of people affected (annoyed, sleep disturbed, or other)	Not currently available	Not currently available	Not currently available	Not currently available	Not currently available