AIR QUALITY

NATIONAL PLANNING POLICY FRAMEWORK

The Government’s overall planning policies for England are described in the National Planning Policy Framework (NPPF). Of particular relevance is paragraph 181, which states:

“Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.”

NATIONAL POLICY STATEMENT FOR NATIONAL NETWORKS

The National Policy Statement for National Networks (NN NPS) addresses emissions of pollutants affecting air quality—specifically oxides of nitrogen (NOx) and PM10. In paragraph 3.8, it considers that:

“The impact of road development on aggregate levels of emissions is likely to be very small. Impacts of road development need to be seen against significant projected reductions in carbon emissions and improvements in air quality as a result of current and future policies to meet the Government’s legally binding carbon budgets and the European Union's air quality limit values.”

Paragraphs 5.3 to 5.15 of the NN NPS address air quality and set out the requirements of the Applicant’s assessment, the Secretary of State’s responsibilities in decision making, and mitigation to address any significant effect considered an Air Quality Directive (2008/50/EC) compliance risk.

Paragraph 5.12 states that:

“The Secretary of State must give air quality considerations substantial weight where a project would lead to a significant air quality impact in relation to EIA and/or where they lead to a deterioration in air quality in a zone/agglomeration.”

Of importance to the Scheme’s progression is paragraph 5.13, which states:

“The Secretary of State should refuse consent where, after taking into account mitigation, the air quality impacts of the scheme will:

\[\rightarrow\] result in a zone/agglomeration which is currently reported as being compliant with the Air Quality Directive becoming non-compliant; or

\[\rightarrow\]”

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1 National Planning Policy Framework, Department for Communities and Local Government, March 2012.
3 Ibid.
affect the ability of a non-compliant area to achieve compliance within the most recent timescales reported to the European Commission at the time of the decision."

The air quality assessment presented in this chapter takes into account this policy and determines the compliance risk presented by the Scheme and what, if any, mitigation would be required to ensure compliance.

**HIGHWAYS ENGLAND AIR QUALITY STRATEGY**

In August 2017, Highways England published ‘Our Strategy to Improve Air Quality’\(^4\). This follows on from the Department for Transport Road Investment Strategy\(^5\) and the Highways England Delivery Plan 2015-2020\(^6\). The strategy recognises the critical importance of air quality to the UK and sets out the approach to “achieving cleaner air for our customers and our neighbours who live alongside our network”. The strategy commits that, through:

Policy - “We will work with others to develop and deliver policies to improve air quality”;

Planning - “We will, where appropriate, design out or mitigate poor air quality for our schemes”;

Monitoring - “We will build a clear picture of air quality across our network”; and

Operational management - “We will actively improve air quality by optimising the use of the network.”

**REGIONAL AND LOCAL POLICY**

Regional and local policy has been considered for only those planning authorities included within the study area (defined in Chapter 5.3). The local planning authorities are Lewes District Council (LDC) and Wealden District Council (WDC).

**LEWES DISTRICT LOCAL PLAN 2003\(^7\)**

The Lewes District Local Plan 2003 Local plan has been superseded by the Joint Core Strategy adopted in 2016; however, policy ST30 has been retained to protect both air and land quality. Policy ST30 - Protection of Air and Land Quality states:

“When considering planning applications for potentially polluting development, the Council will need to be satisfied on the following matters:

- That the location is appropriate in terms of land use in relation to the uses in the surrounding area;
- That the development will have an acceptable impact on the surrounding area in terms of its effect on health, the natural environment, or general amenity, resulting from releases to water land or air, or noise, dust, vibration, light or heat;
- That the development will not have an adverse effect on the use of other land;
- That, where relevant, the appropriate after-use of land can be secured; and

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\(^7\) Lewes District Council (2003). Lewes District Plan.
LEWES DISTRICT LOCAL PLAN PART 1: JOINT CORE STRATEGY 2010-2030

The Lewes District Local Plan Part 1: Joint Core Strategy 2010-2030, was adopted in May 2016, replacing the Lewes District Local Plan 2003. The Strategy promotes sustainable development and sets out the scale, type and location of key development proposed in the district to 2030.

Core Policy 9 - Air Quality sets out two key strategic objectives:

- "To reduce the need for travel and to promote a sustainable system of transport and land use for people who live in, work in, study in and visit the district; and"
- "To ensure that the district reduces locally contributing causes of climate change and is pro-active regarding climate change initiatives."

To improve air quality development applications will be assessed to determine whether their location, nature or scale could impact on any AQMAs and will be required to:

- “Seek improvements in air quality through implementation of measures in the AQAP; and"
- Provide mitigation measures where the development and/or associated traffic would adversely affect any declared AQMA".

All applications for development will be required to:

- "Provide mitigation measures where the development and/or its associated traffic could lead to a declaration of a new or extended AQMA."
- Ensure that the development will not have a negative impact on the surrounding area in terms of its effect on health, the natural environment or general amenity, taking into account cumulative impacts.
- Promote opportunities for walking, cycling and public transport and congestion management to reduce traffic levels in areas of reduced air quality, particularly in town centre locations, and promote the opportunity for cycling through the provision of cycleways.
- Secure best practice methods to reduce levels of dust and other pollutants arising from the construction of development and/or from the use of the completed development."

LEWES AIR QUALITY ACTION PLAN

LDC published their AQAP in 2009. It includes local measures to reduce NO₂ concentrations, to help meet Air Quality Strategy objectives, and improve air quality in the Council’s two AQMAs: Lewes Town Centre and A259 Newhaven Ring Road and Town Centre No. 1.

The AQAP also highlights the role of the East Sussex County Council Local Transport Plan (ESCC LTP2) 2006-11 in helping deliver improvements in local air quality. ESCC LTP2 has been superseded by the third iteration of the Local Transport Plan covering the next fifteen years to 2026⁸.

WEALDEN LOCAL PLAN

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The Wealden Local Plan is currently being updated. The adopted Wealden Local Plan⁹ was published in 1998. As of September 2007, a number of policies in the Wealden Local Plan were saved by approval of the Secretary of State, including Policy EN1 - Sustainable Development. It states:

“The Council will pursue sustainable development, having regard to the principles contained in Government guidance and its own Strategy for the Environment, in considering the location, layout and design of development, renewable energy and waste management proposals and in assessing the effects of proposals on the environment, including on water and air quality”.

**WEALDEN AIR QUALITY ACTION PLAN**

WDC currently does not have any AQMAs, therefore no formal AQAP has been set up and implemented for the District.

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### CULTURAL HERITAGE

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<thead>
<tr>
<th>LEGISLATION</th>
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<tr>
<td>Ancient Monuments and Archaeological Areas Act (AMAAA) 1979</td>
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<td>Planning (Listed Buildings and Conservation Areas (PLBCA)) Act 1990</td>
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<td>Hedgerows Regulations 1997</td>
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<td>National Networks National Policy Statement 2014</td>
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<td>National Planning Policy Framework (NPPF) 2018&lt;sup&gt;10&lt;/sup&gt;</td>
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<td>South Downs National Park Local Plan (2014-2019)</td>
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<td>Lewes District Local Plan (2010-2030)</td>
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<td>Highways England 2008 Design Manual for Roads and Bridges (DMRB)</td>
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<td>CIfA 2014, Standards and Guidance for Historic Environment Desk-Based Assessment</td>
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<td>CIfA 2014a, Code of Conduct</td>
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<td>CIfA 2014b, Standards and Guidance for Consultancy Advice</td>
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### LANDSCAPE

EUROPEAN UNION DIRECTIVES AND NATIONAL LEGISLATION

The following guidelines, legislation and planning policy documents provide the framework for the protection and conservation of landscape and townscape within the study area.

Key relevant legislation includes the Town and Country Planning Act 1990. The countryside and Rights of Way Act 2000, and the Planning Act 2008, 'Part 7 -Orders granting development consent', including PRoW and Green Belt, as well as 'Schedule 8 -Tree Preservation Orders: further amendments'.

Legislation of specific relevance to this chapter is outlined below

The European Landscape Convention (ELC) sets out an internationally agreed definition of landscape and key actions that countries should follow. The ELC provides an integrated holistic approach and international context for landscape; under the headline banner that "All Landscapes Matter". The convention is a treaty between states (not an EU Directive) and seeks to influence governments decisions rather than direct them. It was signed by the UK government in 2006, and came into effect in March 2007.

**Countryside and Rights of Way Act 2000**

The Act, contains measures to improve public access to the open countryside and registered common land while recognising the legitimate interests of those who own and manage the land concerned; it amends the law relating to rights of way; it amends the law relating to nature conservation by strengthening protection for Sites of Special Scientific Interest.

It also provides for access (and limitations to access) for the general public and statutory undertakers.

**Town and Country Planning Act 1990**

The Act set up vehicles for environmental protection and recreation. It also established Tree Preservation Orders, including trees in Conservation Areas.

**POLICY**

**Highways England**

The Road Investment Strategy aims to mitigate existing landscape problems on the network, particularly in protected areas, as well as enhancing the landscape quality through new schemes.

Highways England Delivery Plan 2015-2020

This sets out in detail how Highways England will deliver its strategic outcomes and measure success. It will invest to improve the look of the network as well as protecting and enhancing the character and quality of the built and natural landscape. It will also continue to develop a programme of interventions to reduce visual impacts.

**LOCAL POLICY**

Lewes District Council and Wealden District Council
At a local level development is controlled through local planning policy prepared in accordance with national policy. Local Plans set out a vision and a framework for the future development of the area within boundaries of the local authorities. The proposed Scheme is located partially within Lewes District Council (LDC,) for the eastern part of the Scheme and Wealden District Council (WDC,) for the western part of the Scheme) and the landscape related policies of both councils are considered in this report.

Additionally, the landscape policies of SDNP also inform the baseline of this report.

A summary of policies relevant to the Scheme in terms of landscape and visual aspects are listed below.

→ South Downs National Park-Local plan: Preferred Options Pre-adoption Local Plan 2018
  * Core Policy SD3: Major Development in the South Downs National Park
  * Core Policy SD4/WW: The Western Weald
  * Strategic Policy SD5: Landscape Character
  * Strategic Policy SD7: Safeguarding Views
  * Strategic Policy SOS: Relative Tranquillity
  * Strategic Policy SD9: Dark Night Skies
  * Strategic Policy SD14: Green Infrastructure
  * Strategic Policy SD19: Walking, Cycling and Equestrian Routes
  * Strategic Policy SD30: Strategic: Infrastructure Provision

→ Development Management Policy SD37: Trees, Woodland and Hedgerows

→ Lewes District Council - Lewes District Local Plan (2003 - saved policies)
  * External Lighting ST7
  * Landscaping of Development ST11
  * Landscaping of Development ST12
  * Landscape Conservation and Enhancement CT2

→ Lewes District Council - Lewes District Local Plan Part 1 (May2016)
  * Core Policy 7: Infrastructure
  * Core Policy 8: Green Infrastructure
  * Core policy 10: Natural Environment and Landscape

→ Wealden District Council-Core Strategy Local Plan

→ Wealden District Council (Incorporating part of South Downs National Park) (February 2013)
  * WCS13: Green Infrastructure
  * WCS14: Presumption in Favour of Sustainable Development

**GUIDANCE**

The following guidance has been used in the assessment of likely landscape and visual effects:

Highways England’s Interim Advice Note (IAN) 135/10 which supersedes the relevant section of the Design Manual for Roads and Bridges
- Guidance for Landscape and Visual Impact Assessment (Third Edition) (GLVIA3), published by the Landscape Institute and the IEMA (2013) and:

- Natural England’s, An Approach to Landscape Character Assessment (October 2014)
## BIODIVERSITY

### LEGISLATION
- Wildlife and Countryside Act (as amended) 1981
- The Conservation of Habitats and Species Regulations 2017 (Habitat Regulations)
- The Natural Environment and Rural Communities (NERC) Act 2006
- The Protection of Badgers Act 1992

### POLICY
- National Planning Policy Framework 2018
- National Networks Policy Statement 2014
- The UK Post-2010 Biodiversity Framework 2012
- Highways England Biodiversity Action Plan

### GUIDANCE
- Design Manual for Roads and Bridges (DMRB) Guidelines Volume 10 Section 4
- Design Manual for Roads and Bridges (DMRB) Guidelines Volume 11
- Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine 2018
- Interim Advice Note 130/10
# GEOLOGY AND SOILS

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<th>LEGISLATION</th>
<th>Environmental Protection Act (EPA) 1990</th>
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<td>Contaminated Land (England) (Amendment) Regulations 2012</td>
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<td>Water Framework Directive (WFD) 2000/60/EC</td>
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<td>Construction Design and Management (CDM) Regulations 2015</td>
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<td>POLICY</td>
<td>Lewes District Council Local Plan (Part 1 (2016) and part 2 (2017))</td>
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<td>Wealden District Council Local Plan (2015)</td>
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<td>South Downs National Park Authority Local Plan (2017)</td>
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<td>GUIDANCE</td>
<td>Design Manual for Roads and Bridges (DMRB) (1993)</td>
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<td>National Planning Policy Framework (NPPF) 2018</td>
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<td>Part 2a Contaminated Land Statutory Guidance (2014)</td>
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<td>The Definition of Waste: Development Industry Code of Practice (2011)</td>
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<td>BRE Concrete in Aggressive Ground (2005)</td>
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<td>Natural England Technical Information Note TIN049 (2012)</td>
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Directive 2014/52/EU (‘the EIA Directive’) provides the overarching legislative framework for assessing the significance of impacts and effects from projects on the environment.

The Directive requires that environmental assessment takes a full account of the “nature and quantity of materials” used on a scheme, to ensure that “resource efficiency (is) increased”. The Directive also requires a description of the “material assets significantly affected by a scheme”, as well as a description of the “quantities and types of waste produced during the construction and operation phases”. Impacts and effects from demolition activities must also be assessed.


A definition of waste is provided in the predecessor to this Directive (European Directive 2006/12/EC) which defines waste as:

“any substance or object that the holder discards or intends to or is required to discard”.

It is important to note that the definition of ‘discard’ set out in the Waste Framework Directive is different to its dictionary definition: the Directive definition includes any substance or object that is discarded for disposal or that has not been subject to acceptable recovery (including recycling).

In accordance with the Waste Framework Directive, Member States are obligated to give due consideration to waste prevention mechanisms and where possible recover, reuse or recycle waste. Specifically, explicit targets are laid out for construction, demolition and excavation wastes: 70% of non-hazardous construction and demolition waste must be recovered, reused or recycled by 2020.

The Waste Framework Directive sets out the Waste Hierarchy (Figure 10.1) against which action to reduce the production and disposal of waste shall be taken.

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11 Town and Country Planning (Environmental Impact Assessment) Regulations (2017) [England link] [Scotland link] [Wales link] [Northern Ireland link]
12 Infrastructure Planning (Environmental Impact Assessment) Regulations (2017) [link]
The main principles of the Waste Hierarchy\textsuperscript{15} are:

- **Prevention** - using less material in design and manufacture; keeping products for longer; reuse; using less hazardous materials;
- **Preparing for reuse** - checking, cleaning, repairing, refurbishing, whole items or spare parts;
- **Recycling** - turning waste into a new substance or product; includes composting if it meets quality protocols;
- **(other types of) Recovery** - anaerobic digestion; incineration with energy recovery; gasification and pyrolysis which produce energy (fuels, heat and power); recovering materials from waste; some backfilling; and
- **Disposal** - landfill and incineration without energy recovery.

**UK ACTS AND LEGISLATION**

The following acts and legislation set out the conditions to be met for the control of the storage, collection, treatment and disposal of waste in England.

\(\rightarrow\) **The Controlled Waste (England and Wales) Regulations 2012**\textsuperscript{16}. The Regulation provides a definition of controlled waste and classifies waste as household, industrial or commercial waste. It allows Local Authorities to implement charges for the collection of waste from non-domestic properties.

\(\rightarrow\) **The Waste (England and Wales) Regulations 2011**\textsuperscript{17}. The legislative requirements of the EU Directive are transposed into UK law via this regulation. It stipulates the requirement for industry and businesses to implement the Waste Hierarchy.

\(\rightarrow\) **Clean Neighbourhoods and Environment Act 2005**\textsuperscript{18}. States that it is the responsibility of construction workers on site to guarantee that waste is disposed in the appropriate manner. In accordance with this, employees must undertake waste disposal activities as outlined in national law.

\textsuperscript{15} Defra (2011) Guidance on applying the Waste Hierarchy \[\text{link}\]
\textsuperscript{17} HM Government (2011) The Waste (England and Wales) Regulations 2011
\textsuperscript{18} HM Government (2005) The Clean Neighbourhoods and Environment Act 2005
Hazardous Waste (England and Wales) Regulation’s 2005\(^{19}\). Introduces measures to control the storage, transport and disposal of hazardous waste. It provides a means to ensure that hazardous waste and any associated risks are appropriately managed.

Waste Minimisation Act 1998\(^{20}\). Enables Local Authorities to take the appropriate steps to reduce and minimise the generation of household, commercial or industrial waste within their area.

Environmental Protection Act 1990\(^{21}\). Outlines the requirement of the manager of a development to ensure that any excess materials or waste as a result of construction activities are recovered or disposed of without any subsequent adverse effects upon the surrounding environment.

The Control of Pollution Act 1974\(^{22}\). Makes provisions with respect to the generation and revision of ‘waste disposal plans’ and prohibits the unlicensed disposal of waste.

### PLANS AND POLICY

#### NATIONAL POLICY

The following policy documents set out the vision, goals and ambitions for waste in England.

**NATIONAL PLANNING POLICY FRAMEWORK (NPPF)**


The Waste Management Plan for England also outlines the waste hierarchy, which gives top priority to waste prevention, followed by preparing for reuse, the recycling, other types of recovery and finally disposal (e.g. landfill).

National Planning Policy for Waste, 2014\(^{24}\). Outlines the ambition to promote a sustainable approach to resource use and management. It sets out waste planning policies, and should be read alongside: the National Planning Policy Framework; the National Waste Management Plan for England and any relevant successor policies, guidance or documents. Policies include:

- Delivery of sustainable development and resource efficiency, including provision of modern infrastructure, local employment opportunities and wider climate change benefits, by driving waste management up the waste hierarchy;
- Ensuring that waste management is considered alongside other spatial planning concerns, such as housing and transport, recognising the positive contribution that waste management can make to the development of sustainable communities;
- Helping to secure the reuse, recovery or disposal of waste without endangering human health and without harming the environment; and

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\(^{21}\) HM Government (1990) The Environmental Protection Act 1990
\(^{24}\) DCLG (2014) National Planning Policy for Waste [link](#)
Ensuring the design and layout of new residential and commercial development and other infrastructure (such as safe and reliable transport links) complements sustainable waste management, including the provision of appropriate storage and segregation facilities to facilitate high quality collections of waste.

The National Planning Policy also states that when determining planning applications for non-waste development, local planning authorities should, to the extent appropriate to their responsibilities, ensure that:

- The likely impact of proposed, non-waste related development on existing waste management facilities is acceptable and does not prejudice the implementation of the waste hierarchy and/or the efficient operation of such facilities;
- New, non-waste development makes sufficient provision for waste management and promotes good design to secure the integration of waste management facilities with the rest of the development and, in less developed areas, with the local landscape; and
- The handling of waste arising from the construction and operation of development maximises reuse/recovery opportunities, and minimises off-site disposal.

National Policy Statement for Hazardous Waste 2013. Outlines the main objectives on Government Policy for hazardous waste, including:

- To protect human health and the environment: there are stringent legislative controls in place to control the management of waste with hazardous properties;
- Implementation of the waste hierarchy: This aids the production of less hazardous waste, promoting its reuse as a resource (where possible). Disposal of the waste is noted as a last resort;
- Self-sufficiency and proximity: This ensures that sufficient disposal facilities are provided across country to match expected arisings of all hazardous wastes, except those produced in very small quantities, and to enable hazardous waste to be disposed of in one of the nearest appropriate installations; and
- Climate change: To minimise greenhouse gas emissions and maximise opportunities for climate change adaptation and resilience.

The policy additionally outlines the key principles for the management of hazardous waste, as follows:

- **Principle 1**: Hazardous waste should be managed as to provide the best possible environmental outcome. This is expected to be in line with the waste hierarchy, with the exception of when life cycle analysis suggests that the best overall environmental option would require a departure from that hierarchy.
- **Principle 2**: Requires a reduction in reliance upon landfill, with landfill only being used where there is no alternative recovery or disposal option available.
- **Principle 3**: This principle requires that hazardous waste is not mixed with different categories of hazardous waste or with other waste substances or materials (although co-disposal of some wastes in landfill is allowed).

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→ **Principle 4:** Stipulates that organic hazardous wastes that cannot be reused, recycled or recovered should be subject to destruction using best available techniques, with energy recovery for all appropriate treatments. No hazardous organic waste should be landfilled unless the requirements of the Landfill Directive are met.

→ **Principle 5:** The practice of relying on higher Landfill Directive waste acceptance criteria to enable some hazardous waste to continue to be landfilled must end.

**LOCAL POLICY**

The following policy documents set out the vision, goals and ambitions for the management of materials and waste in East Sussex.

**The Waste and Minerals Plan for East Sussex, South Downs and Brighton and Hove** is published by East Sussex County Council and adopted in February 2013. The waste and minerals planning strategy for East Sussex is set out in a series of documents collectively known as the Waste and Minerals Local Plan. This plan replaced the majority of the policies that were contained in the Waste Local Plan (2006) and Minerals Local Plan (1999). The purpose of the document is to plan for mineral extraction and associated development and waste management facilities in the most sustainable way that minimises adverse impacts on amenity and the environment. The principal aims of the Minerals Policy (WMP14) are to:

→ Safeguard mineral resources

**GUIDANCE**

The following guidance document has been used in the preparation of this Chapter.

→ **IAN 153/11 Guidance on the Environmental Assessment of Material Resources.** Provides guidance for the assessment of the impacts and effects associated with the use of materials in new construction, improvement and maintenance projects. Outlines the consideration of material resource use and waste as part of an EIA process. The document provides a definition of materials resources:

> "the materials and construction products required for the construction, improvement and maintenance of the road network. Materials resources include primary raw materials such as aggregates and minerals, and manufactured construction products. Many material resources will originate off site, purchased as construction products, and some will arise on site such as excavated soils or recycled road planings".

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26 East Sussex County Council, East Sussex, South Downs and Brighton & Hove Waste and Mineral Local Plan (2013)[link]
NOISE AND VIBRATION

INTERNATIONAL LEGISLATION

DIRECTIVE 2002/49/EC OF THE EUROPEAN PARLIAMENT, 2002

This Directive relates to the assessment and management of environmental noise, and it is commonly referred to as the Environmental Noise Directive (END). It promotes the implementation of a three-step process:

- Undertake strategic noise mapping to determine exposure to environmental noise
- Ensure information on environmental noise is made available to the public
- Establish Action Plans based on the strategic noise mapping results, to reduce environmental noise where necessary, and to preserve environmental noise quality where it is good.

EU Directive 2002/49/EC has been transposed into UK law as the Environmental Noise (England) Regulations 2006 (as amended). As part of this process, noise mapping has been undertaken and Noise Important Areas (NIAs) have been identified at locations where the 1% of the population that are affected by the highest noise levels are located, in order to identify the areas which require potential action.

DIRECTIVE 2014/52/EU OF THE EUROPEAN PARLIAMENT, 2014

This Directive published on 16 April 2014 amends Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

It was considered necessary to amend the 2011 Directive to strengthen the quality of the environmental impact assessment procedure, align that procedure with current best practice and other relevant legislation and policies developed by the European Union and Member States.

An Environmental Impact Assessment report prepared under this legislation should include, inter alia, a description of the likely significant effects of the project and the measures envisaged to avoid, reduce or, if possible, offset any identified significant adverse effects on the environment.

NATIONAL LEGISLATION


The NIR were made under powers inferred by Section 20 of Part II of the Land Compensation Act. Regulation 3 imposes a duty on authorities to undertake or make a grant in respect of the cost of undertaking noise insulation work in or to eligible buildings, subject to meeting certain criteria given in the Regulation, for new roads or carriageways.

Regulation 4 provides authorities with discretionary powers to undertake or make a grant in respect of the cost of undertaking noise insulation work in or to eligible buildings for an altered road.

Regulation 5 provides authorities with discretionary powers to undertake or make a grant in respect of the cost of undertaking noise insulation work in or to eligible buildings during construction works for a substantial period of time, but in respect of which building no duty under Regulation 3 or power under Regulation 4 has arisen.

With respect to residential properties affected by noise from new or altered highways, to qualify for such an offer, four criteria must all be fulfilled at 1m in front of the most exposed door or window of an eligible room in the façade of a property:
Level - The highest total traffic noise level expected within the first fifteen years use of the road (the 'Relevant Noise Level') must be not less than the Specified Level of 68 dB(A) $L_{A10,18h}$. Predicted noise levels of 67.5 dB $L_{A10,18h}$ and above are rounded up to 68 dB $L_{A10,18h}$.

Increase - The Relevant Noise Level in the design year, or within any other year between the year before the highway construction works commenced and the design year, must be at least 1 dB(A) greater than that immediately before construction commenced (the 'Prevailing Noise Level').

Contribution - Noise from traffic on the road for which the Regulations apply must contribute at least 1.0 dB $L_{A10,18h}$ to the Relevant Noise Level.

Locality - The property under consideration must be within 300 m of the scheme.

The Regulations apply only to qualifying eligible rooms, which include living rooms and bedrooms affected by road traffic noise.

The NIR requires application of the road traffic noise level calculation method detailed within the Calculation of Road Traffic Noise memorandum 1988 (CRTN).

CONTROL OF POLLUTION ACT, 1974

The principal legislation covering demolition and construction noise is the Control of Pollution Act 1974, Part III. Sections 60 and 61 of the Act give the local authority special powers for controlling noise arising from construction and demolition works, regardless of whether a statutory nuisance has been caused or is likely to be caused. Works within the scope of these provisions include repair and maintenance work and road works. These powers may be exercised either before works start or after they have started.

Section 60 enables a local authority in whose area work is going to be carried out, or is being carried out, to serve a notice of its requirements for the control of site noise on the person who appears to the local authority to be carrying out the works. Such a notice may also be served on others appearing to the local authority to be responsible for, or to have control over, the carrying out of the works.

This notice can:

- Specify the plant or machinery that is or is not to be used
- Specify the hours during which the construction work can be carried out
- Specify the level of noise that can be emitted
- Provide for any changes of circumstances.

Section 61 of the Act provides a mechanism for the contractor or developer to take the initiative and approach the local authority to ascertain its noise requirements before construction work starts. If a formal application for ‘prior consent’ is received by the local authority it is obliged to give a decision within 28 days; failure to do so or the attachment of unnecessary or unreasonable conditions are grounds for appeal by the applicant.

In cases where the local authority determines that the proposals for minimising the noise of the construction activities are adequate it will issue a consent although this may be subject to conditions limiting certain aspects of the consent such as hours of use, noise levels for particular activities, etc. Provided that the applicant takes all reasonable steps to operate within the terms of the consent, even if the local authority subsequently decides to take proceedings under section 60(8), the applicant should be able to rely on the defence provided in the Act and prove that the alleged contravention amounted to the carrying out of works in accordance with a consent given under section 61.

NATIONAL POLICY AND GUIDANCE
NOISE POLICY STATEMENT FOR ENGLAND (NPSE), 2010

The NPSE seeks to ensure that noise issues are considered at the right time during the development of policy and decision making, and not in isolation. It highlights the underlying principles on noise management already found in existing legislation and guidance.

The NPSE sets out the long-term vision of Government noise policy as follows:

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

This long-term vision is supported by the following aims:

“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

• avoid significant adverse impacts on health and quality of life;
• mitigate and minimise adverse impacts on health and quality of life; and
• where possible, contribute to the improvement of health and quality of life.”

To assist in the understanding of the terms ‘significant adverse’ and ‘adverse’, the NPSE acknowledges that there are concepts that are currently being applied to noise impacts, for example, by the World Health Organisation (WHO). They are:

NOEL - No Observed Effect Level - This is the level below which no effect can be detected and below which there is no detectable effect on health and quality of life due to noise.

LOAEL - Lowest Observable Adverse Effect Level - This is the level above which adverse effects on health and quality of life can be detected.

SOAEL - Significant Observed Adverse Effect Level - This is the level above which significant adverse effects on health and quality of life occur.

However, the NPSE goes on to state that:

“it is acknowledged within the NPSE that it is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available.”

NATIONAL PLANNING POLICY FRAMEWORK (NPPF), 2018

First published in 2012 and most recently updated in July 2018, the NPPF sets out the Government’s planning policies for England and how these are expected to be applied. The NPPF superseded Planning Policy Guidance Note (PPG) 24: Planning and Noise amongst other PPG’s and Planning Policy Statements (PPS’s). In contrast to PPG 24, reference to noise is scant within the NPPF. Noise is referenced within the document as follows:

“170. Planning policies and decisions should contribute to and enhance the natural and local environments by:…. [a number of points including]…”
• preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;”

and

“180. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;60;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason;…”

Reference number 60 of the above quotation points to the Explanatory Note to the Noise Policy Statement for England (NPSE).

NATIONAL POLICY STATEMENT FOR NATIONAL NETWORKS (NPSNN), 2015

The Department for Transport published the NPSNN in December 2015. It provides planning guidance for promoters of nationally significant infrastructure projects on the road and rail networks.

Paragraph 5.189 of the NPSNN states where a development is subject to EIA and significant noise impacts are likely to arise from the scheme, the applicant should include a noise assessment which details the noise and vibration baseline, sensitive receptors, predictions of changes in baseline with the scheme and mitigation measures.

It goes on to state in paragraph 5.193 that developments must be undertaken in accordance with the statutory requirements for noise and that due regard must be given to the relevant sections of the National Policy Statement for England, National Planning Policy Framework and the Government’s associated planning guidance on noise.

The NPSNN also confirms that for most national network projects, the relevant Noise Insulation Regulations will apply.

PLANNING PRACTICE GUIDANCE, 2014

This web-based resource was issued for use by the Department for Communities and Local Government (DCLG). The purpose of the guidance is to complement the NPPF and provide advice on how to deliver its policies.

The section on noise was published on 6 March 2014 and last updated in December 2014. It includes a table that summarises "the noise exposure hierarchy based on the likely average response" and offers "examples of outcomes" relevant to the NOEL, LOAEL and SOAEL effect levels described in the NPSE. The term Unacceptable Adverse Effect (UAE) level is introduced which equates to noise perceived as "noticeable and very disruptive". It is stated that UAEs should be prevented.
These outcomes are in descriptive form and there is no numerical definition of the NOEL, LOAEL and SOAEL (or UAE), or detailed advice regarding methodologies for their determination. There is also no reference to the further research that is identified as necessary in the NPSE. The noise exposure hierarchy table is duplicated below in Table A11-1.

**Table A11-1 – Noise Exposure Hierarchy Based on the Likely Average Response**

<table>
<thead>
<tr>
<th>PERCEPTION</th>
<th>EXAMPLES OF OUTCOMES</th>
<th>INCREASING EFFECT LEVEL</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not noticeable</td>
<td>No Effect</td>
<td>No Observed Effect</td>
<td>No specific measures required</td>
</tr>
<tr>
<td>Noticeable and not intrusive</td>
<td>Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.</td>
<td>No Observed Adverse Effect</td>
<td>No specific measures required</td>
</tr>
<tr>
<td>Noticeable and intrusive</td>
<td>Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.</td>
<td>Observed Adverse Effect</td>
<td>Mitigate and reduce to a minimum</td>
</tr>
<tr>
<td>Noticeable and disruptive</td>
<td>The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.</td>
<td>Significant Observed Adverse Effect Level</td>
<td>Avoid</td>
</tr>
<tr>
<td>Noticeable and very disruptive</td>
<td>Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.</td>
<td>Unacceptable Adverse Effect</td>
<td>Prevent</td>
</tr>
</tbody>
</table>

**ROAD INVESTMENT STRATEGY: FOR THE 2015/16 – 2109/20 ROAD PERIOD, 2015**

The Department for Transport document Road Investment Strategy: for the 2015/16 - 2019/20 Road Period (RIS) was published in March 2015 and sets out policies relating to the strategic planning and funding of the road network.

The document outlines (in Section 6) an aspiration for a 90% reduction in the number of people impacted by noise from the Strategic Road Network (SRN) by 2040.
The RIS identifies a capacity to improve noise levels through the management and redevelopment of Highways England assets, via low noise road surfacing, noise barriers etc. It is expected that Highways England will deliver mitigation measures to at least 1,150 NIAs, helping to improve the quality of life of around 250,000 people by the end of the first road period.

All new and improved road schemes will, therefore, be expected to utilise low noise road surfaces as a default, and investigate noise attenuating barriers and other potential mitigation options, where practicable.

HIGHWAYS ENGLAND: LICENCE, 2015

The Department for Transport document titled Highways England: Licence (Secretary of State for Transport statutory directions and guidance to the strategic highways company) was published in April 2015.

In complying with paragraph 4.2(g) and its general duty under section 5(2) of the Infrastructure Act 2015 Highways England should:

"Minimise the environmental impacts of operating, maintaining and improving its network and seek to protect and enhance the quality of the surrounding environment and ensure this is considered at all levels of operations. In exercising its functions, the licence holder must have due regard to relevant principles and guidance on good design, to ensure that the development of the network takes account of geographical, environmental and socio-economic context."

LOCAL AUTHORITY GUIDANCE AND POLICY

COUNTY GUIDANCE


This document has been prepared jointly by all local authorities in Sussex at County, City, District and Borough levels, including Wealden District Council and Lewes District Council.

It is stated in the introduction that whilst the guidance provided in the document is advisory, it seeks to complement the aims set out in the NPSE.

The guide sets-out some basic principles to apply sequentially to any proposed development.

- Separate the noise source from the receptor
- Demonstrate that all reasonable steps have been taken to reduce the impact of noise, including the positioning and orientation of the noise source/receptor
- If adverse effects are still anticipated, adequate mitigation should be employed, including consideration of noise barriers and, as a last resort, the insulation of buildings.

It is also stated that consideration should be given to noise from demolition and construction activities as well as from operational effects.

Section 6 of the guide deals with transport schemes, which covers additional vehicle movements likely to be generated by new development as well as stand-alone transport schemes, such as significant changes to existing roads and new road developments.

The guidance directs the reader towards the DMRB Volume 11 Section 3 for guidance on the indices to use in the assessment, the way to assess predicted noise levels and the effect of mitigation measures and the information to be provided for different levels of noise assessments.
WEALDEN DISTRICT COUNCIL POLICY
Wealden District Council Local Development Scheme, July 2018

This document provides a schedule of current policy relevant to the Wealden District Council area. Two of those policy documents are the Core Strategy Local Plan and saved policies from the Wealden Local Plan.

Wealden District (Incorporating Part of the South Downs National Park) Core Strategy Local Plan, February 2013

The strategies, objectives and policies contained in this document make no specific mention of noise and vibration implications of the potential improvements to the A27. However, core strategy WCS14 relates more generally to sustainable development:

“WCS14 Presumption in Favour of Sustainable Development

When considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will always work proactively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area. Planning applications that accord with the policies in the Local Plan (and, where relevant, with policies in neighbourhood plans) will be approved without delay, unless material considerations indicate otherwise. Where there are no policies relevant to the application or relevant policies are out of date at the time of making the decision then the Council will grant permission unless material considerations indicate otherwise – taking into account whether:

→ Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Framework

→ Policy Framework taken as a whole; or Specific policies in that Framework indicate that development should be restricted.”

Wealden Local Plan, December 1998

Chapter 4 entitled ‘Environment’ identifies that care for the environment lies at the heart of the plan’s strategy and that while it is necessary to make adequate provision for development and change, this should be “firmly in the context of maintaining and enhancing the environmental qualities of the area and according with the principles of sustainability.”

Five specific environmental objectives are identified, the fourth of which is “to ensure that development and change do not detract from the valued environmental qualities of the locality.”

Saved policy EN27 refers to the layout and design of development. Whilst this policy relates more to building development than transport infrastructure, the sentiment is relevant and aligned with the objective identified above “that the proposed development should not create an unacceptable adverse impact on the privacy and amenities of adjoining developments and the neighbourhood by reason of scale, height, form, noise and traffic movements.”

Chapter 9 entitled ‘Transport’ states (in paragraph 9.10 under the sub-heading ‘Environmental Considerations’) that “the Council attaches great importance to making a careful assessment of the environmental and landscape effects when considering new road proposals.”

Saved policy TR1 states that “All new road schemes should have regard to the constraints of the environment both natural and built to minimise their environmental impact.”
In paragraph 9.11 it is stated that “at a more detailed stage, such as following the selection of a preferred route, the Council is anxious to ensure that any potential noise and visual intrusion is minimised.”

Immediately following, saved policy TR2 states “In considering detailed road proposals, the Council will seek to ensure that the relevant highways authority undertakes measures to minimise the degree of visual and noise intrusion…”

LEWES DISTRICT COUNCIL POLICY

Lewes District Council Revised Local Development Scheme, September 2018

This document identifies that the development plan for the area currently comprises a number of documents, two of which are the Lewes District Local Plan Part 1: Joint Core Strategy and saved policies from the Lewes District Local Plan.

Lewes District Local Plan Part 1: Joint Core Strategy, May 2016

The strategies, objectives and policies contained in this document make no specific mention of the noise and vibration implications for the potential improvements to the A27. However, prior to setting-out a number of spatial policies, Section 6 of the document includes a statement on sustainable development that is almost identical to core strategy WCS14 in the Wealden District Core Strategy Local Plan (see paragraph 0), which relates generally to sustainable development:

Core policy 13 of the Lewes District Local Plan relates to sustainable travel and states *inter alia* that “the local planning authority will work with East Sussex County Council and other relevant agencies to encourage and support measures that promote improved accessibility, create safer roads, reduce the environmental impact of traffic movements, enhance the pedestrian environment, or facilitate highway improvements.”

Lewes District Local Plan, March 2003

In Chapter 3 entitled ‘Strategy of the District Wide Plan’, one of the general aims of the plan is to achieve “a transport strategy which balances choice, safety, efficiency, environmental protection and reduction of pollution.”

In Chapter 4 entitled ‘Environmental Principles’, aims and objectives are identified, with one of the stated objectives being to seek to minimise “…pollution of air, land and water directly or indirectly associated with new development…”

Noise and development was covered by policy ST13. ST13 states “Planning permission will not be granted for development which results in people, animals or sensitive areas being exposed to unreasonable levels of noise. As far as possible, noise sensitive developments shall be located away from existing or programmed sources of significant noise. Potentially noisy developments shall normally be located in areas where noise will not be of a significant consideration or where its impact can be minimised.” However, ST13 was not amongst those policies saved in 2009 under a direction from the Secretary of State.

In Chapter 10 entitled ‘Transport and Communications’ aims and objectives are identified, with one of the stated aims being to “provide for a network of communications throughout the District, to meet the need of residents and business which does not unduly compromise the environment.” This objective has an associated aim, which is to “assess critically the future role of road improvements, new road, traffic management and traffic calming paying particular attention to their impact on the environment.”

TECHNICAL GUIDANCE

DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB), 2011
Prepared by the Highways Agency (now Highways England), Transport Scotland, Welsh Assembly Government and The Department for Regional Development Northern Ireland, the DMRB is a comprehensive manual which contains requirements, advice and other published documents relating to both the design, maintenance, operation and assessment of trunk roads and motorways, but it is stated that it may also, in part, be applicable to other roads with similar characteristics. Commentary advice is provided for where Local Authorities adopt the guidance for local roads.


Amongst many other things the DMRB provides the following guidance that is relevant to the assessment of operational road traffic:

**Scenarios**

For the assessment of permanent noise and vibration impacts, consideration is given to the noise level changes that will arise both in the short-term and the long-term.

The short-term scheme impacts are derived by comparing the ‘Do Minimum’ scenario (i.e. without the Proposed Development) in the ‘opening year’\(^{27}\), with the ‘Do Something’ scenario (i.e. with the Proposed Development) in the same year. The long-term impacts are derived by comparing ‘Do Minimum’ scenario in the opening year with the ‘Do Something’ scenario in the ‘design year’. The design year is typically taken as the 15\(^{th}\) year after opening, although this may be different, if for example higher traffic flows are expected in an earlier year.

**Impact Criteria**

To assist in determining the likely effects of a scheme HD 213/11. The table presents the magnitude of impact tables duplicated below. The tables make an important distinction between short term and long-term impacts. In the long-term, the impact of an equivalent change in noise level is considered to be reduced in magnitude compared with the short-term.

It should also be noted that the current version of the DMRB requires night-time noise impacts to be considered in the long-term only and for receptors subject to predicted levels equal to or greater than 55 dB(A) L\(_{\text{night}}\).

**TABLE A11-2 – DMRB CRITERIA FOR MAGNITUDE OF OPERATIONAL DAYTIME ROAD NOISE IMPACTS IN THE SHORT TERM**

<table>
<thead>
<tr>
<th>NOISE CHANGE (L(_{A10,18h})), dB</th>
<th>MAGNITUDE OF IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No Change</td>
</tr>
<tr>
<td>0.1 – 0.9</td>
<td>Negligible</td>
</tr>
<tr>
<td>1 – 2.9</td>
<td>Minor</td>
</tr>
<tr>
<td>3 – 4.9</td>
<td>Moderate</td>
</tr>
<tr>
<td>5+</td>
<td>Major</td>
</tr>
</tbody>
</table>

\(^{27}\) It should be noted that the DMRB text actually refers to this assessment year as the ‘baseline year’. To avoid confusion for the purpose of this technical report, the terminology used is ‘opening year’, and ‘baseline year’ is reserved for an assessment year specified prior to the Proposed Development opening. This is in order to make a clear differentiation between the noise assessment prediction model and the ‘baseline survey’.
### Table A11-3 – DMRB Criteria for Magnitude of Operational Day or Night-time Road Noise Impacts in the Long Term

<table>
<thead>
<tr>
<th>Noise Change ($L_{A10,18h}$), dB</th>
<th>Magnitude of Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No Change</td>
</tr>
<tr>
<td>0.1 – 2.9</td>
<td>Negligible</td>
</tr>
<tr>
<td>3 – 4.9</td>
<td>Minor</td>
</tr>
<tr>
<td>5 – 9.9</td>
<td>Moderate</td>
</tr>
<tr>
<td>10+</td>
<td>Major</td>
</tr>
</tbody>
</table>

### Calculation of Road Traffic Noise (CRTN), 1988

The former Department of Transport/Welsh Office technical memorandum Calculation of Road Traffic Noise (CRTN) methodologies have been adopted.

The factors which may influence road traffic noise levels at source can be divided into two groups:

- Road related factors - gradient and surface type
- Traffic related factors - flow, speed and the proportion of heavy duty vehicles.

The propagation of noise is also covered in CRTN and can influence the noise levels at receptor locations.

### Interim Advice Note 185/15 (IAN185/15)

Updated traffic, air quality and noise advice on the assessment of link speeds and generation of vehicle data into ‘speed-bands’ for users of DMRB Volume 11, Section 3, Part 1 Air Quality and Volume 11, Section 3, Part 7 Noise

IAN 185/15 provides guidance to those generating traffic data, and particularly vehicle speeds, for Highways England air quality and noise road scheme assessments.

The IAN recognises that significant emphasis is often placed on traffic speeds that are generated by the traffic model for individual links, but that the traffic model does not have a similar level of certainty.

Consequently, the following process has been conceived, which "provides a pragmatic and robust approach to support air quality and noise assessments and is not unduly influenced by artificial precision":

- Analyse the performance of modelled traffic speeds on individual road links, comparing against observed speeds on the same road links
- Adjust, where required, modelled traffic speeds on individual road links to better reflect observed speeds; this is known as ‘speed pivoting’
- Assign the resulting speed on individual road links to a relevant speed-band category (different categories are used for motorway and non-motorway roads) for use within air quality and noise modelling; this is known as ‘speed banding’.

### TRL Project Report PR/SE/451/02, 2002

Converting the UK traffic noise index $L_{A10,18h}$ to EU noise indices for noise mapping.
The Calculation of Road Traffic Noise prediction method produces noise levels in terms of $L_{A10}$, either over a 1-hour or an 18-hour period.

The European-wide noise mapping exercise required by EU Directive 2002/49/EC relating to the assessment and management of environmental noise (colloquially known as the Environmental Noise Directive or END), requires outputs in terms of $L_{den}$ and $L_{night}$, both of which are based on the equivalent continuous noise level $L_{Aeq}$.

TRL published a report in 2002, which provided a ‘back-end’ correction for converting the UK traffic noise index $L_{A10,18h}$ to the noise indices required for EU noise mapping.

The TRL report presented equations for three potential methods of conversion, depending on the quantity and quality of traffic data available.

- **Method 1** is the most detailed and can be used when the assessor has available hourly traffic data. Equations are provided for motorway and non-motorway roads to covert $L_{A10,1h}$ to $L_{Aeq,1h}$, with the generated $L_{Aeq,1h}$ values subsequently being used to derive values of $L_{den}$ and $L_{night}$ as required by the END.

- **Method 2** can be used where traffic data are known or can be estimated for the relevant time periods specified in the END (i.e. 12-hour day, 4-hour evening and 8-hour night) as well as the 18-hour period, with the generated $L_{day}$, $L_{evening}$ and $L_{night}$ values subsequently being used to derive values of $L_{den}$ as required by the END.

- **Method 3** is the least detailed and can be used when only $L_{A10,18h}$ traffic data are available. Equations are provided for motorway and non-motorway roads to covert $L_{A10,18h}$ directly to the $L_{den}$ and $L_{night}$ values as required by the END.

For this assessment method 3 has been adopted and as none of the roads in the study area (including the Proposed Scheme) are motorways, all calculations to determine the $L_{night}$ have utilised the non-motorway correction.


Code of practice for noise and vibration control on construction and open sites. Part 1 noise

This Standard provides the latest recommendations for basic methods of noise control where there is a need for the protection of persons living and working in the vicinity of, and those working on, construction and open sites.

The Standard includes guidance on assessing the significance of noise effects. In particular, Annex E provides a discussion on the different approaches to the assessment of construction noise, in doing so giving consideration to absolute noise levels (in section E2) and to two different approaches to setting criteria based on the ambient noise level ($L_{Aeq,T}$) in the absence of construction noise (in section E3).

Firstly, the Standard describes the ‘older and more simplistic’ approach based on the advice in AL 72, noting that the original advice “has been expanded over time to include a suite of noise levels covering the whole day/week period taking into account the varying sensitivities through these periods.” Table A11-4 (Table E.2 in sub-clause E.4 of the Standard) illustrates the approach – the levels are also stated as being often used as limits above which noise insulation would be provided, subject to the temporal conditions described following the table.

| TABLE A11-4 – EXAMPLES OF TIME PERIODS, AVERAGING TIMES AND NOISE LEVELS ASSOCIATED WITH THE DETERMINATION OF ELIGIBILITY FOR NOISE INSULATION |
The Standard suggests that where, in spite of the mitigation measures applied, the combined construction and baseline noise levels exceed 75 dB(A) (for a period of ten or more days of working in any fifteen consecutive days or for a total of days exceeding 40 in any six month period), a scheme for the installation of noise insulation or the reasonable costs thereof will be implemented by the developer or promoter.

In sub-clause E.3 an alternative approach is described based on considering the change in the ambient noise level that the construction noise causes. This approach is used commonly in EIA. Two methods are described.

The first is the ABC method an example of which is set out in Table A11-5 below (Table E.1 in the Standard). Three categories, A, B and C are described in terms of threshold noise levels for a daytime (07:00 to 19:00 weekdays, 07:00 to 13:00 Saturday), evening and weekend, and finally a night-time period (23:00 to 07:00). If the combined ambient noise and construction noise exceed the relevant threshold level this is deemed a ‘significant effect’.

Table A11-5 - Example Threshold of Potential Significant Effect at Dwellings

<table>
<thead>
<tr>
<th>ASSESSMENT CATEGORY AND THRESHOLD VALUE PERIOD</th>
<th>CATEGORY A (A)</th>
<th>CATEGORY B (B)</th>
<th>CATEGORY C (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Night-time (23:00 – 07:00)</td>
<td>45</td>
<td>50</td>
<td>55</td>
</tr>
<tr>
<td>Evenings and weekends (D)</td>
<td>55</td>
<td>60</td>
<td>65</td>
</tr>
<tr>
<td>Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00)</td>
<td>65</td>
<td>70</td>
<td>75</td>
</tr>
</tbody>
</table>
Notes:

[1] A potential significant effect is indicated if the $L_{Aeq,T}$ noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level.

[2] If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total $L_{Aeq,T}$ noise level for the period increases by more than 3 dB due to site noise.


(A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

(B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

(C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.

(D) 19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays.

The second method states that “Noise levels generated by site activities are deemed to be potentially significant if the total noise (pre-construction ambient plus site noise) exceeds the pre-construction ambient noise by 5 dB or more, subject to lower cut off values of 65 dB, 55 dB and 45 dB $L_{Aeq,T}$ from site noise alone, for the daytime, evening and night-time periods, respectively; and a duration of one month or more, unless works of a shorter duration are likely to result in significant impact.”

These criteria may be applied not just to residential buildings, but also to hotels and hostels and buildings in religious, educational and health/community use.

The +5 dB criterion for a period of one month or more, might also be deemed to cause significant effects in public open space. However, the extent of the area impacted relative to the total available area also needs to be taken into account.

Annex F of the Standard provides guidance on estimating noise from construction sites. The estimation procedures described in this Annex take into account the more significant factors:

→ The sound power outputs of processes and plant
→ The periods of operation of processes and plant
→ The distances from source to receiver
→ The presence of screening by barriers
→ The reflections of sound
→ Attenuation from absorbent ground.

Four discrete prediction methods are described, two for stationary plant – the activity $L_{Aeq,T}$ method and the plant sound power method – and two for mobile plant – the method for mobile plant in a defined area and the method for haul roads.


Code of practice for noise and vibration control on construction and open sites. Part 2 Vibration

The Standard provides the latest recommendations for basic methods of vibration control where there is a need for the protection of persons living and working in the vicinity of, and those working on, construction and open sites.
With respect to human exposure to building vibration, Table B1 of Annex B to BS 5228-2 provides guidance on the effects of vibration levels on human beings, and it is these (as reproduced in Table A11-6) that the construction vibration effects have been based upon.

**TABLE A6 - BS 5228-2 GUIDANCE ON EFFECTS OF VIBRATION LEVELS**

<table>
<thead>
<tr>
<th>VIBRATION LEVEL</th>
<th>EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.14 mm·s(^{-1})</td>
<td>Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.</td>
</tr>
<tr>
<td>0.3 mm·s(^{-1})</td>
<td>Vibration might be just perceptible in residential environments.</td>
</tr>
<tr>
<td>1.0 mm·s(^{-1})</td>
<td>It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents.</td>
</tr>
<tr>
<td>10 mm·s(^{-1})</td>
<td>Vibration is likely to be intolerable for any more than a very brief exposure to this level.</td>
</tr>
</tbody>
</table>

Guide values for cosmetic damage to buildings are given in Table B.2 of the Standard, and this is reproduced below as Table A11-7, together with Figure A.1 (Figure A11-1 below) to which it refers:

**TABLE A11-7 - BS 5228-2 GUIDANCE ON TRANSIENT VIBRATION GUIDE VALUES FOR COSMETIC DAMAGE**

<table>
<thead>
<tr>
<th>LINE (SEE FIGURE B11-1)</th>
<th>TYPE OF BUILDING</th>
<th>PEAK COMPONENT PARTICLE VELOCITY IN FREQUENCY RANGE OF PREDOMINANT PULSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4 HZ TO 15 HZ</td>
</tr>
<tr>
<td>1</td>
<td>Reinforced or framed structures</td>
<td>50 mm·s(^{-1}) at 4 Hz and above</td>
</tr>
<tr>
<td>2</td>
<td>Unreinforced or light framed structures</td>
<td>15 mm·s(^{-1}) at 4 Hz increasing to 20 mm·s(^{-1}) at 15 Hz</td>
</tr>
</tbody>
</table>

Notes:

[1] Values referred to are at the base of the building.

[2] For line 2, at frequencies below 4 Hz, a maximum displacement of 0.6 mm (zero to peak) is not to be exceeded.

It should be noted that the above guidance is for transient vibration. For continuous vibration, such as may occur during the use of vibratory equipment, the guidance in the Standard is that the levels in the Table above and Figure below be reduced by 50%.

**Figure B11-1 - BS 5228-2 Guidance on Transient Vibration Guide Values for Cosmetic Damage**
WORLD HEALTH ORGANISATION, GUIDELINES FOR COMMUNITY NOISE, 1999

The WHO guidelines consolidate scientific knowledge on the health effects of community noise and provide guidance to environmental health authorities and professionals trying to protect people from the harmful effects of noise in non-industrial environments. The main sources of community noise are identified as road, rail and air traffic, industries, construction and public work and neighbours.

A wide range of specific effects and environments are considered in the guidelines but a few that relate to this study are described below.

With regard to community noise, the guidelines state (in section 4.3.7) that annoyance “varies with the type of activity producing the noise . . . . During the daytime, few people are seriously annoyed by activities with $L_{Aeq}$ levels below 55 dB; or moderately annoyed with $L_{Aeq}$ levels below 50 dB.” The time base for these values, which relate to the daytime period, is 16 hours.

With respect to cardiovascular effects, the guidelines state (in section 4.2.4) that “epidemiological studies show that cardiovascular effects occur after long-term exposure to noise (aircraft and road traffic) with $L_{Aeq,24h}$ values of 65–70 dB.”

WORLD HEALTH ORGANISATION, NIGHT NOISE GUIDELINES FOR EUROPE, 2009

This document presents the conclusions of the WHO working group whose remit was to prepare guidelines for exposure to noise during sleep. The document is an extension of the WHO Guidelines for community Noise (1999).

As direct evidence concerning the effects of night noise on health is rarely available, the guidelines also use indirect evidence such as the effects of noise on sleep and the relation between sleep and health.
The guidelines concluded (in section 5.6) that “there is no sufficient evidence that the biological effects observed at the level below 40 dB $L_{night, outside}$ are harmful to health. However, adverse health effects are observed at the level above 40 dB $L_{night, outside}$ such as self-reported sleep disturbance, environmental insomnia, and increased use of somnifacient drugs and sedatives. Therefore, 40 dB $L_{night, outside}$ is equivalent to the LOAEL for night noise. Above 55 dB the cardiovascular effects become the major public health concern, which are likely to be less dependent on the nature of the noise.”

## POPULATION AND HEALTH

<table>
<thead>
<tr>
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<tr>
<td>DMRB, Volume 11, Section 3, Part 6 Land Use.</td>
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<td>DMRB, Volume 11, Section 3, Part 9, Vehicle Travellers</td>
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ROAD DRAINAGE AND THE WATER ENVIRONMENT

LEGISLATION

The management of water resources is governed by a range of legislative guidance set out in international, national and regional policies and plans. This assessment has been prepared whilst taking these plans and policies into account.

The coordination of policies for the water environment is managed by the UK Government. Many flood risk and water quality requirements are set at European level, which are then transposed into UK law. The Environment Agency has a strategic overview regarding the management of all of the sources of flooding and an operational responsibility for managing the risk of flooding from main rivers, reservoirs, estuaries and tidal sources. Lead Local Flood Authorities (LLFAs) are responsible for managing the risk of flooding from local sources, comprising surface water, groundwater and ordinary watercourses.

The applicable legislative framework is summarised as follows:

EUROPEAN POLICY

WATER FRAMEWORK DIRECTIVE (2000/60/EC)

The overall objective of the Water Framework Directive (WFD) is to bring about the effective co-ordination of water environment policy and regulation across Europe. The main aims of the legislation are to ensure that all surface water and groundwater reaches ‘good’ status (in terms of ecological and chemical quality and water quantity, as appropriate), promote sustainable water use, reduce pollution and contribute to the mitigation of flood and droughts.

The WFD also contains provisions for controlling discharges of dangerous substances to surface waters and groundwater and includes a ‘List of Priority Substances’. Various substances are listed as either List I or List II substances, with List I substances considered the most harmful to human health and the aquatic environment. The purpose of the directive is to eliminate pollution from List I substances and reduce pollution from List II substances.
GROUNDWATER DIRECTIVE (2006/118/EC)

The Groundwater Directive aims to set groundwater quality standards and introduce measures to prevent or limit pollution of groundwater, including those listed with the ‘List of Priority Substances’. The directive has been developed in response to the requirements of Article 17 of the WFD, specifically the assessment of the chemical status of groundwater and objectives to achieve ‘good’ status.

NATIONAL POLICY

NATIONAL PLANNING POLICY FRAMEWORK 2012

The National Planning Policy Framework (NPPF) was published in 2012 and sets out the Government’s planning policies for England, providing a framework which allows Local Authorities to produce their own plans that better reflect the specific needs of their communities. Planning Practice Guidance (PPG) has been published alongside the NPPF to provide guidance on the implementation of planning policies, including those relating to flood risk, set out in the NPPF. The PPG for Flood Risk and Coastal Change is updated regularly to respond to changes in guidance and best practice.

The NPPF sets out the requirements for a site-specific FRA to be undertaken and states that development should not increase flood risk elsewhere.

The PPG sets out the requirement to consider sustainable drainage systems (SUDS) within all new development where appropriate. It states that developments should aim to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable:

- Into the ground (infiltration);
- To a surface water body;
- To a surface water sewer, highway drain, or another drainage system;
- To a combined sewer.

Within Plymouth, an amended drainage hierarchy is promoted that better reflects local conditions and requirements. This is discussed below.

Information regarding expected minimum standards is provided within the Non-Statutory Technical Standards for Sustainable Drainage Systems published by DEFRA in March 2015 (discussed below).

FLOOD AND WATER MANAGEMENT ACT 2010

The Flood and Water Management Act 2010 created the role of the LLFA (in this case Plymouth City Council) to take responsibility for leading the co-ordination of local flood risk management in their areas. In accordance with the Flood and Water Management Act the Environment Agency is responsible for the management of risks associated with main rivers, the sea and reservoirs. LLFAs are responsible for the management of risks associated with local sources of flooding such as ordinary watercourses, surface water and groundwater.

The Act is also guiding the role of the LLFA in the review and approval of surface water management systems. In April 2015 this led to a change that requires the LLFA to review and comment on significant development in regard to the recently published Non-Statutory Technical Standards for Sustainable Drainage Systems.

ENVIRONMENTAL PERMITTING (ENGLAND AND WALES) REGULATIONS 2010
The Environmental Permitting (England and Wales) Regulations 2010 replaced the Water Resources Act 1991 as the key legislation for water pollution in the UK. Under the Environmental Permitting Regulations, it is an offence to cause or knowingly permit a water discharge activity, including the discharge of polluting materials to freshwater, coastal waters, relevant territorial waters or groundwater, unless complying with an exemption or an environmental permit. An environmental permit is obtained from the EA. The EA sets conditions which may control volumes and concentrations of particular substances or impose broader controls on the nature of the effluent, taking into account any relevant water quality standards from EC Directives.

The Environment Permitting Regulations also manages works that have the potential to affect a watercourse under the jurisdiction of the Environment Agency. Any works in, under or near a main river requires permission from the EA to ensure no detrimental impacts on the watercourse. Previously, this was a Flood Defence Consent; however, in April 2016 consent for flood risk activities was included under the Environmental Permitting Regulations.

**LAND DRAINAGE ACT (1991)**

Local Authorities and Internal Drainage Boards have additional duties and powers associated with the management of flood risk under the Land Drainage Act 1991. As Land Drainage Authorities, consent must be given for any permanent or temporary works that could affect the flow within an ordinary watercourse under their jurisdiction in order to ensure that local flood risk is not increased.

The Land Drainage Act specifies that the following works will require formal consent from the appropriate authority:

- Construction, raising or alteration of any mill dam, weir or other like obstructions to the flow of a watercourse;
- Construction of a new culvert;
- Any alterations to an existing culvert that would affect the flow of water within a watercourse.

The Land Drainage Act also sets out the maintenance responsibilities riparian owners have in order to reduce local flood risks. Riparian owners, who are land owners with a watercourse either running through their land or adjacent to, have the responsibility to ensure that the free flow of water is not impeded by any obstruction or build-up of material within the watercourse.

**NON-STATUTORY TECHNICAL STANDARDS FOR SUSTAINABLE DRAINAGE SYSTEMS 2015**

The Non-Statutory Technical Standards for Sustainable Drainage Systems, published by DEFRA in March 2015, set out the core technical standards for SUDS proposed within England. These standards should be used in accordance with the NPPF and PPG. The standards include guidance on controlling flood risk within a development boundary and elsewhere, peak flow and runoff volume control, and the structural integrity of SUDS.

**LOCAL PLANNING POLICY GUIDANCE**

**ENVIRONMENT AGENCY GROUNDWATER PROTECTION GUIDES**

POLLUTION PREVENTION GUIDELINES (PPGS)

The Pollution Prevention Guidelines (PPGs) issued by the Environment Agency have now been withdrawn, although a number of these guidelines are still considered relevant to design and construction of the proposed development. In particular, PPG1 provides practical advice on site drainage, PPG5 provides guidance for works in, near, or liable to affect watercourses, and PPG6 provides guidance on the control of water pollution during construction and demolition stages of works. Compliance with these PPGs should be considered as part of the environmental management documentation developed for construction and occupation phases of the development.

DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB)

The assessment has been undertaken in accordance with the principles of the methodology promoted within DMRB Volume 11, Section 3, Part 10 (HD 45/09). This section of the DMRB sets out the recommended approach to the assessment of road schemes on the water environment. Guidance is provided on determining the sensitivity of receptors and the likely magnitude of effects. Specifically the DMRB provides a framework for assessing risks associated with polluted surface water runoff, accidental spillages and flood risk, and provides guidance on mitigation to manage these risks.

CLIMATE

CLIMATE LEGISLATION, PLANS AND POLICY

LEGISLATION

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

The UK is a member of the United Nations Framework Convention on Climate Change (UNFCCC) which drives international action on climate change. The UK has pledged to reduce emissions under the Paris Agreement, as a part of a joint pledge by members of the European Union (EU). This provides an overarching commitment by the UK.

UK CLIMATE CHANGE ACT

The Climate Change Act (2008) established a legal requirement for an 80% reduction in the GHG emissions of the UK economy by 2050 in comparison to the 1990 baseline. The Climate Change Act also created the Committee on Climate Change, with responsibility for:

- Setting 5 year Carbon Budgets covering successive periods of emissions reduction to 2050.

PLANS AND POLICY

INFRASTRUCTURE CARBON REVIEW

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28 United Nations Framework Convention on Climate Change [https://unfccc.int/](https://unfccc.int/)
In 2013, the UK government published the Infrastructure Carbon Review\(^{30}\), aiming to “release the value of lower carbon solutions and to make carbon reduction part of the DNA of infrastructure in the UK”. Major infrastructure owners, operators and developers were invited to endorse, become signatories and make commitments under the review. Highways England was one of these organisations.

The review provided increased emphasis on ‘capital carbon’ (GHG emissions associated with raw materials, activities and transport for construction, repairs, replacement, refurbishment and de-construction of infrastructure) while acknowledging that ‘operational carbon’ (associated with energy consumption for the operation and use of infrastructure) will continue to dominate overall emission to 2050 and beyond.

The Infrastructure Carbon Review highlighted the need to assess GHG emissions early in the lifecycle of an infrastructure project when there is the greatest carbon reduction potential. It also led to the publication of a Publicly Available Specification on infrastructure carbon management; PAS2080:2016.

**NATIONAL PLANNING POLICY FRAMEWORK (NPPF)**

The revised NPPF (2018)\(^{31}\) includes in the definition of the environmental objective ‘mitigating and adapting to climate change, including moving to a low carbon economy’ (paragraph 8).

Chapter 9: Promoting Sustainable Transport encourages the provision of a choice of genuine transportation modes, the use of single private vehicles, the latter being understood to contribute to a significant proportion of total UK carbon emissions. For example, between 1990 and 2007, domestic transport comprised 24% of total UK emissions; the largest share was from road passenger cars at 86%. In 2013, domestic and international transport accounted for 26% of all UK greenhouse gas emissions.

**NATIONAL POLICY FRAMEWORK (NPS) FOR NATIONAL NETWORKS**

The NPS for National Networks (2014)\(^{32}\) chapters relevant to climate change mitigation and adaptation are below.

<table>
<thead>
<tr>
<th>NATIONAL POLICY STATEMENT FOR NATIONAL NETWORKS (2014)</th>
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<td>CHAPTER 3: WIDER GOVERNMENT POLICY ON NATIONAL NETWORKS</td>
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</table>
| EMISSIONS | Identifies that the transport sector will play an important part in meeting the Government’s carbon targets. It is acknowledged that technologies, fuels, and promoting lower carbon transport choices will make the biggest reductions and that (comparatively) the likely impact from road development is “very small”.

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\(^{30}\) HM Treasury (2013). Infrastructure Climate Review. [online] 

\(^{31}\) Ministry of Housing, Communities and Local Government (July 2018) National Planning Policy Framework

NATIONAL POLICY STATEMENT FOR NATIONAL NETWORKS (2014)

TECHNOLOGY  
Sets out how the use of innovative technologies has the potential to improve the way we travel while “reducing costs and environmental impacts”.

SUSTAINABLE TRANSPORT  
Describes how carbon impacts can be reduced by promoting “sustainable modes of transport and high-quality cycling and walking environments” which are “essential to reducing carbon emissions from transport”.

CHAPTER 4: ASSESSMENT PRINCIPLES

ENVIRONMENT IMPACT ASSESSMENT  
This section sets out the fact that all proposals are subject to the EIA Directive (2011/92/EU) which requires “an environmental impact assessment to identify, describe and assess effects on…air, climate…and the interactions between them”.

CHAPTER 5: GENERIC IMPACTS

CARBON EMISSIONS  
Sets out Government policy on climate change and outlines the importance of reducing carbon emissions, stating that the Government has a legally binding commitment to reduce greenhouse gas emissions by “at least 80% by 2050” and to conform to carbon budgets outlined in the “Carbon Plan 2011”.

BIODIVERSITY  
The policy states that “Carbon impacts will be considered as part of the appraisal of scheme options (in the business case), prior to the submission of an application for DCO” and that “any Environmental Statement will need to describe an assessment of any likely significant climate factors in accordance with the requirements in the EIA Directive”.

ENVIRONMENT STRATEGY FOR EAST SUSSEX

The Environment Strategy\textsuperscript{33} sets out to deliver the strategic priorities for the environment and climate change in East Sussex. The strategy identifies ten key principles in order to achieve this. Two of the principles are relevant to climate change and transport and detailed in Table B15-1.1

\textbf{TABLE B15-1.1 – EAST SUSSEX ENVIRONMENTAL STRATEGY}

<table>
<thead>
<tr>
<th>ENVIRONMENTAL PRINCIPLE</th>
<th>OBJECTIVES</th>
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| Reduce our greenhouse gas emissions, become more adaptive to climate change and help individuals and communities to do the same | The Council seeks to:  
  > Reduce emissions of CO₂ in East Sussex at least in line with national targets by reducing fossil fuel energy consumption, increasing energy efficiency and developing appropriate local sources of renewable energy |

\textsuperscript{33} East Sussex Strategic Partnership, Environment Strategy for East Sussex (2011):  
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<tr>
<th>TABLE B15-1.1 – EAST SUSSEX ENVIRONMENTAL STRATEGY</th>
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<tr>
<td>➤ Prepare for the effects of climate change and ensure that organisations and communities in East Sussex develop and implement plans to adapt to climate change</td>
</tr>
<tr>
<td>➤ Effectively manage flood risk and coastal erosion, ensuring that new developments are appropriately located and that people and property are better prepared and protected</td>
</tr>
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Reduce the impact of travel on the environment and improve sustainable travel choices to access services and facilities within and between communities in the county

The Council seeks to:

➤ Increase sustainable travel choices through improvements to support public and community transport, walking, cycling and car-share and to promote the health benefits of walking and cycling

➤ Reduce greenhouse gas emissions, local air pollution and noise from transport

➤ Minimise the need to travel and improve access to jobs, education, health and other services through affordable and sustainable transport and technology-based solutions

EAST SUSSEX LOCAL TRANSPORT PLAN 2011 – 2026

The Local Transport Plan states that tackling climate change is one of the high level objectives. The objectives focuses on reducing CO2 emission generated by transport in order to mitigate the impacts of climate change.