

# Environmental Sustainability



## *Bexley's Environmental Sustainability Strategy*

*Adopted  
February 2011*





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## Introduction

### **Vision for environmental sustainability and introduction to the strategy**

#### **Vision**

- 1.1 Environmental Sustainability is defined as providing for a high level of protection of the environment to enable it to contribute to the achievement of sustainable development<sup>1</sup>. Bexley has a vision for environmental sustainability in the borough, that:

*By 2025, Bexley will have achieved sustainable growth including the preservation of the environmental character of the borough and, wherever possible, have enhanced the best aspects of Bexley so that residents and people working in or visiting the borough enjoy a better quality of life*

- 1.2 To achieve this vision, in particular:

- Bexley will have embraced the opportunities offered by its position in the Thames Gateway, with a wider employment offer and homes and other developments designed, built and operated according to principles of sustainability, providing attractive, sustainable communities.
- New development will have fully adapted to the consequences of climate change and will be designed with regard to Whole Life Costings<sup>2</sup> so as to make the best use of limited resources.
- New developments will have ensured the most efficient use of land whilst preserving or enhancing the best aspects of Bexley's suburban character and contributed fully to the provision of new facilities and services where appropriate and viable.
- Bexley will have a range of services and amenities within walking distance of homes and town centres. Employment areas will be easily accessible by foot, cycle and public transport and connections between the north and south of the borough and to the wider public transport network will have been improved.
- Reliance on heavy goods vehicles will have been reduced as much better use is made of the River Thames and rail connections to transport freight.
- Bexley will remain a 'green borough,' well served by a network of high quality, safe and accessible open spaces, offering a range of leisure, recreational and cultural opportunities and providing attractive breaks in built form.
- The borough's biodiversity will have been preserved and extended in both large sites and smaller, locally-important spaces through sensitive development, improvement and management schemes and the creation of new habitats.
- Historic buildings and areas will have been protected or enhanced.
- Bexley will have implemented effective measures to minimise the risk of flooding and to mitigate the impacts of flooding if it occurs.
- Bexley will be playing its part in implementing international, national and regional strategies for the mitigation of and adaptation to climate change; and moving to a low carbon economy through energy efficiency and the use of renewable energy.

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<sup>1</sup> Adapted from: European Directive on the Assessment of the Effects of Certain Plans and Programmes, 2001/42/EC

<sup>2</sup> See Whole Life Costing and Cost Management: Achieving Excellence in Construction Procurement Guide, Office of Government Commerce, 2007

- The Council will have embraced a commitment to ensure, within realistic resource budgeting, that its existing property assets will be used efficiently and effectively to minimise land take and to adapt to the consequences of climate change and sustainability within a suitable service environment.

### **Purpose of the Environmental Sustainability Strategy**

- 1.3 This Strategy brings together the Council's responsibilities for environmental sustainability, contained in several strategies. In doing so, it:
- draws out areas of mutual benefit within these responsibilities; and between environmental sustainability and other responsibilities;
  - highlights potential tensions between aspirations; and between environmental sustainability and other priorities, where appropriate, it suggests potential solutions to help achieve different aspirations;
  - identifies gaps where the Council has not yet developed policies to deal with resolving such tensions and proposes methods of addressing them;
  - helps set out and balance priorities and resolve potential differences, as well as informing the best use of resources;
  - helps the Partnership for Bexley achieve its commitments to delivering environmental sustainability priorities included in the Sustainable Community Strategy;
  - provides a single source of information about Council policy on environmental sustainability issues; and
  - facilitates the co-ordination of the Council's responsibilities and effective joint working between services, and between the Council and its partners.
- 1.4 The Council adopted this Strategy in February 2011, following public consultation.

### **Strategic themes**

- 1.5 The Strategy addresses environmental sustainability across a number of themes:
- Theme 1 **Adaptation to and mitigation of climate change**
  - Theme 2 **Energy management, including carbon reduction**
  - Theme 3 **Water supply and quality**
  - Theme 4 **Sustainable transport**
  - Theme 5 **The built environment, including housing**
  - Theme 6 **The natural environment**
  - Theme 7 **Waste minimisation and management**
  - Theme 8 **Environmental quality, pollution and crime**
- 1.6 Each theme is discussed in turn, focusing on the principal relationships between the theme under consideration and each other theme. Relationships between themes are identified as:

Green (G) = positive relationship

Amber (A) = potential issues between themes addressed by existing strategies

Red (R) = potential issues between themes to be addressed by further action

- 1.7 The majority of these relationships are positive (Green), expressing complementary benefits are being derived from different themes. However, among the purposes of



the Environmental Sustainability Strategy are: highlighting potential tensions between aspirations and priorities; and identifying policy gaps to balancing priorities and help resolve those tensions. The Strategy therefore includes an Action Plan which focuses on those relationships where potential issues between themes are identified.

### **The local strategic context for environmental sustainability**

- 1.8 Local authorities work with local partners to deliver a Sustainable Community Strategy (SCS), the purpose of which is “to set the overall strategic direction and long-term vision for the economic, social and environmental wellbeing of a local area... in a way that contributes to sustainable development.” Bexley’s *Sustainable Community Strategy*<sup>1</sup> integrates social, economic and environmental objectives to provide an overarching framework for the Council’s programmes and those of local strategic partners. The SCS informs the Core Strategy of Bexley’s Local Development Framework<sup>2</sup> (LDF). The SCS and LDF, therefore, provide the principal context for the themes and priorities in this Strategy. Appendix C summarises the SCS, the LDF and other relevant local, national and regional strategies. The thematic chapters identify other local strategies that are particularly relevant to each theme.

### **Key priorities for an environmentally-sustainable future**

- 1.9 The Council has wide-ranging responsibilities for many aspects of environmental sustainability. It has significant opportunities to influence good environmental practice. The Council has developed a range of management systems and a comprehensive strategic framework which governs the prudent and sustainable use of natural resources. These include initiatives that promote the wellbeing of local communities, and systems that directly relate to the sustainable environmental management of the Council as an organisation. An Environmental Management System (EMS) certified to ISO 14001 operates across a range of services and provides a systematic, objective, and coordinated risk-based approach to managing environmental issues.
- 1.10 The Council also influences other organisations by its approach to environmental sustainability. The Council provides community leadership to encourage others to adopt environmentally-sustainable practices.
- 1.11 The Council’s operations have considerable environmental impacts: it spends over £140 million a year on goods and services; operates offices, schools and other public buildings; provides services which rely on managing and maintaining vehicle fleets; is the largest employer in the borough; and is its largest land-owner. The Council’s priorities to help achieve our vision for environmental sustainability are:
- Delivering good performance on priorities relating to environmental sustainability (see Implementation and monitoring).
  - Working effectively with the Mayor of London so that Bexley contributes to and benefits from Mayoral strategies that deliver environmental sustainability.
  - Ensuring regeneration programmes are underpinned by enhanced environmental sustainability and external funding bids support this priority wherever practicable.
  - Ensuring Bexley’s transport objectives and the aims of *Jump on Board*, the Council’s campaign to enhance transport choice by improving public transport

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2 At the time of publication of this Strategy, the LDF Core Strategy was being prepared for submission to the Government. Following submission it will be the subject of Examination in Public where the document will be assessed by a Planning Inspector. Unless otherwise indicated, references to the LDF Core Strategy are to the Proposed Submission Document, November 2010: [www.bexley.gov.uk/CHttpHandler.ashx?id=7795&p=0](http://www.bexley.gov.uk/CHttpHandler.ashx?id=7795&p=0)

throughout Bexley, are achieved.

- Protecting and, wherever possible, enhancing the borough's biodiversity and open spaces, including the successful delivery of environmental regeneration schemes.
- Enhancing the sustainable use of the River Thames and riverside areas by promoting a range of transport, leisure, recreational and cultural opportunities.
- Protecting and enhancing Bexley's built environment, especially the suburban character and residential amenity of residential areas and public spaces.
- Ensuring the Bexley First business transformation programme fully contributes to the Council's approach to environmental sustainability.

## Theme 1

### **Adaptation to and mitigation of climate change**

#### **Background**

- 2.1 Tackling climate change by reducing greenhouse gas emissions has become a major global priority. There is now a strong consensus amongst scientists that greenhouse gas emissions are causing the climate to change at an unprecedented scale and speed. Latest predictions suggest that globally temperatures could rise by up to 6°C by 2100. The UK will experience progressively warmer and drier summers, wetter and milder winters and more frequent extreme weather. London, in particular, will be very vulnerable to floods, droughts and heat waves<sup>1</sup>.
- 2.2 Climate change will affect many aspects of life for people living and working in Bexley. There are risks associated with flooding from increased rainfall and flash storms, which will test flood defences and may cause serious property damage; transport and communications will also be affected by the closure of roads and rail networks. Bexley's approach has been to develop a strategy for our community that contains both mitigation measures (that reduce greenhouse gases in the atmosphere) and adaptation measures (to help us reduce the vulnerability of natural and human systems against climate change effects).

#### **Strategic approach**

- 2.3 International commitments to deal with the causes and impacts of climate change are contained principally in the Kyoto Protocol<sup>2</sup> and the Convention on Biological Diversity<sup>3</sup>.
- 2.4 UK legislation<sup>4</sup> sets legally-binding targets of cuts in greenhouse gas emissions.
- 2.5 The Mayor of London's *Climate Change Adaptation Strategy*<sup>5</sup> and *Climate Change Mitigation and Energy Strategy*<sup>6</sup> will also strongly influence actions to deal with climate change in Bexley.
- 2.6 *Bexley's Climate Change Strategy*<sup>7</sup> sets out the Council's strategic response towards adaptation to and mitigation of the effects of climate change. The Strategy adopts a dual community/corporate approach to managing environmental risk and thereby deals with carbon emissions from all sources within the borough. The Climate Change Strategy Action Plan seeks to manage environmental risk through a combination of mitigation and adaptation. Actions to mitigate the effects of climate change by reducing greenhouse gas emissions are combined with adaptive measures that evaluate and manage the risk to people and environment from a changing climate.

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2 Kyoto Protocol was established to limit the growth in the emissions of greenhouse gases

3 The Convention on Biological Diversity (CBD) established the goals of conserving biological diversity, sustainable use of its components and the sharing of the benefits from the use of genetic resources, [www.jncc.gov.uk/page-1365](http://www.jncc.gov.uk/page-1365).

4 [www.opsi.gov.uk/acts/acts2008/ukpga\\_20080027\\_en\\_1](http://www.opsi.gov.uk/acts/acts2008/ukpga_20080027_en_1)

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7 At the time of publication of this Strategy, the Council's Climate Change Strategy was being reviewed. It will be available on the Council's web-site [www.bexley.gov.uk](http://www.bexley.gov.uk) later in 2011.



- 2.7 The *LDF Core Strategy*<sup>1</sup> seeks to deliver a shared vision for the sustainable development of the borough. Policies will be underpinned by a spatial strategy and development principles which will seek to make the most efficient use of previously-developed land, protect open space, promote sustainable transport and address the causes and impacts of climate change.
- 2.8 Other adopted LDF documents that directly affect our responses to climate change are, principally, the *Sustainable Design and Construction Guide*<sup>2</sup> and *Design for living*<sup>3</sup>, the residential design guide, both supplementary planning documents (SPDs). The Sustainable Design and Construction Guide strongly encourages the adoption of water efficient practice in new developments, including water-saving devices and water re-circulation, recycling and water recovery systems; and the use of alternative water sources including grey water recycling and rainwater harvesting.
- 2.9 A *Strategic Flood Risk Assessment*<sup>4</sup> (SFRA) for Bexley has been prepared because the borough is prone to flooding from many sources, and climate change will increase its probability. New development in flood prone areas will be minimised through applying the sequential test set out in the SFRA.
- 2.10 Partnership working (between the Council, Thames Water and the Environment Agency) will be utilised to prepare a joint urban drainage strategy to ensure that flood risk from urban watercourses, drainage and main rivers are considered together.

**Relationships with other environmental sustainability themes**

- 2.11 **Table 1** summarises the principal relationships between climate change and other environmental sustainability themes. The Action Plan sets out proposed actions, timescales and lead responsibilities to address the issues identified for further action in the table.

**Table 1 Principal relationships between climate change and other strategic themes**

Green	positive relationship	<b>G</b>
Amber	potential issues between themes addressed by existing strategies	<b>A</b>
Red	potential issues between themes to be addressed by further action	<b>R</b>

Theme	Relationships	
Energy	<ul style="list-style-type: none"> <li>Climate change and energy strategies aligned</li> <li>Energy saving measures for street lighting reducing carbon emissions (approx. 675 tonnes a year) and reducing costs</li> <li>Highways Assets Management Plan to ensure efficient and sustainable investment in and maintenance of highways assets (highways, pavements, bridges, street-lighting)</li> <li>Renewable energy installations reduce levels of greenhouse gas emissions from energy generation</li> <li>The Sustainable Design and Construction Guide and the Mayor of London's policy to reduce CO<sub>2</sub> by 20% from renewable energy for new development</li> </ul>	<b>G</b>

1 [www.bexley.gov.uk/CHttpHandler.ashx?id=7795&p=0](http://www.bexley.gov.uk/CHttpHandler.ashx?id=7795&p=0)  
 2 <http://www.bexley.gov.uk/article/3101/Sustainable-design-and-construction-guide-SPD>  
 3 <http://www.bexley.gov.uk/article/4053/Design-for-living---Bexleys-residential-design-guide>  
 4 [www.bexley.gov.uk/CHttpHandler.ashx?id=7810&p=0](http://www.bexley.gov.uk/CHttpHandler.ashx?id=7810&p=0) and Appendix A, Mapping: [www.bexley.gov.uk/CHttpHandler.ashx?id=7811&p=0](http://www.bexley.gov.uk/CHttpHandler.ashx?id=7811&p=0)

Theme	Relationships	
Energy (contd.)	<p>are both helping reduce carbon emissions from new housing development by encouraging new homes to be constructed to Code for Sustainable Homes Level 3</p> <ul style="list-style-type: none"> <li>National and regional policy on addressing climate change requires local planning authorities to take a more strategic, locally-specific, approach to planning for sustainable energy use</li> </ul>	G
	<ul style="list-style-type: none"> <li>Climate change and energy strategies addressing energy consumption's contribution to greenhouse gas emissions</li> </ul>	A
Water	<ul style="list-style-type: none"> <li>Climate change increasing probability of flooding, addressed by development and implementation of Strategic Flood Risk Assessment (SFRA)</li> <li>National and regional policy on addressing climate change requires local planning authorities to take a more strategic, locally-specific, approach to managing the risks associated with flooding</li> </ul>	G
	<ul style="list-style-type: none"> <li>Water stress is exacerbated by climate change; measures to relieve water stress and/or improve quality could have other impacts on climate change (eg land and energy demands for desalination)</li> <li>Potential flooding and drought will occur at different times of year than historically, and extreme weather events may become more frequent, as a result of climate change</li> </ul>	A
Sustainable transport	<ul style="list-style-type: none"> <li>Sustainable transport, delivered through the Transport Strategy and Jump On Board campaign, will contribute to adapting to and mitigating the effects of climate change by reducing greenhouse gas emissions</li> </ul>	G
	<ul style="list-style-type: none"> <li>Regional and local transport plans need to be better aligned</li> <li>Some existing transport choices emit greenhouse gases: increased use will increase emissions</li> </ul>	A
Built environment	<ul style="list-style-type: none"> <li>Sustainable design and construction policies &amp; guidance in place: sustainable development principles applied to housing and other developments will reduce demand for non-renewable energy, and lower CO<sub>2</sub> emissions</li> <li>Grants and loan schemes encouraging home energy efficiency</li> <li>Council reducing energy consumption in its buildings, through awareness campaigns; installation of efficiency measures, including micro-generation</li> <li>Urban greening can help improve thermal efficiency - and therefore energy efficiency - of the built environment</li> <li>Plants and habitats help buffer local environment from extremes of weather; and absorb CO<sub>2</sub>; initiatives to encourage planting and nurturing of trees include public realm and transport infrastructure improvements, landscaping schemes associated with redevelopment, planning obligations and NWKCP 'free trees' scheme</li> </ul>	G
	<ul style="list-style-type: none"> <li>Policies and guidance with regard to sustainable design and construction need a review and updating to reflect emerging technologies, national and regional policy, etc; applying them to housing and other developments will further reduce demand for non-renewable energy, and lower CO<sub>2</sub> emissions</li> <li>Need to balance need for climate change adaptation/mitigation measures in existing local communities with obligations to preserve/enhance residential/suburban and historic character of those communities</li> </ul>	A
	<ul style="list-style-type: none"> <li>Need to adapt existing homes and other buildings to make them more energy efficient and contribute to climate change mitigation</li> </ul>	R

Theme	Relationships	
Natural environment	<ul style="list-style-type: none"> <li>Plants and habitats help buffer local environment from extremes of weather; and absorb CO<sub>2</sub>; initiatives to encourage planting and nurturing of trees include public realm and transport infrastructure improvements, landscaping schemes associated with redevelopment, planning obligations and NWKCP 'free trees' scheme; climate change adaptation and mitigation measures can benefit the natural environment.</li> </ul>	G
	<ul style="list-style-type: none"> <li>If designed and managed properly as a coherent network, green infrastructure (the network of green spaces, places and features that thread through and surround urban areas and connect town to country, including parks, gardens, allotments, cemeteries, trees, green roofs and natural habitats) can provide a practical response to the challenges of climate change mitigation and adaptation (eg, flood management, urban heat islands, encourage walking and cycling and boost local food production)</li> </ul>	A
Waste management	<ul style="list-style-type: none"> <li>Increases in amount of waste recycled/composted and reductions in amount of waste both reducing increase in waste going to landfill, thereby reducing greenhouse gas emissions</li> <li>Commitment to protecting key infrastructure assets such as Crossness Sewage Treatment Works from the risks of flooding contributing to flood risk management</li> </ul>	G
	<ul style="list-style-type: none"> <li>Recovering energy from waste is a less environmentally-sustainable method of dealing with waste than some other options within the waste hierarchy; recovering energy from waste is a more environmentally-sustainable method of producing energy than generating energy from fossil fuels. Risk of increased emissions from waste incineration.</li> </ul>	A
Environmental quality	<ul style="list-style-type: none"> <li>no issues</li> </ul>	

## Theme 2

### **Energy management, including carbon reduction**

#### **Background**

- 3.1 A number of factors are coming together to drive forward changes in how we use and supply our energy. There are rising concerns about energy security, long-term increases in fossil fuel prices, and a growing awareness that global fossil fuel resources are finite. People and organisations are becoming more aware of the costs of energy and there are opportunities for homes and business premises to become producers of energy. Most buildings in Bexley could significantly reduce their fuel bills through simple measures. Waste is a resource which can be used to produce energy<sup>1</sup>.
- 3.2 The Council has, with external financial support<sup>2</sup>, invested significantly in energy efficiency programmes to provide renewable energy systems, insulation, better heating and better lighting for schools, car parks and community centres. The Council is developing a comprehensive and standardised system of recording and benchmarking energy use for both static and vehicular emission sources in order to identify the existing situation and measure progress towards meeting targets for energy reduction.

#### **Strategic approach**

- 3.3 The Council's *Corporate Energy Strategy*<sup>3</sup> aims to lead by example and give concerted focus on issues of energy management. It will help ensure that the Council reduces its energy use and carbon emissions to achieve the greatest financial and environment benefits, including a 25% reduction in Council energy use by 2014, a saving of £1.6 million each year. It also sets standards and agrees procedural improvements to achieve targets, including the Carbon Reduction Commitment<sup>4</sup>. The Council will complement the Strategy by continuing to work with local residents and organisations to help them cut their carbon footprints by investing in energy efficient improvements.
- 3.4 An Evidence Base for Carbon Reduction Policies, undertaken by Creative Environmental Networks (CEN), has been prepared to provide an evidence base to underpin local CO<sub>2</sub> emissions reduction targets and area-specific opportunities. It identifies strategic sites in the borough where carbon reduction could be achieved through decentralised heat networks in association with mixed-use developments, including several town centres<sup>5</sup> and the Belvedere employment area. The Council will commit to investigating opportunities for the development of decentralised energy networks in these areas.
- 3.5 The CEN study also lists sustainable energy opportunities for each strategic site to be taken forward by the Local Development Framework process<sup>6</sup>. The sustainable growth

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2 From Thames Gateway London Partnership, Carbon Trust and Low Carbon Buildings Programme

3 [democracy.bexley.gov.uk/mgConvert2PDF.aspx?ID=21908](http://democracy.bexley.gov.uk/mgConvert2PDF.aspx?ID=21908)

4

5 Bexleyheath, Crayford, Belvedere, Erith and Sidcup

6 Research has also indicated the potential for a decentralised heat and power network in the Belvedere area, possibly fed by waste heat from the RRRL energy-from-waste plant, and for wind turbines to provide carbon-free energy generation for the area, subject to further site specific investigations

area considerations for Belvedere in the LDF *Core Strategy*<sup>1</sup> include investigations into the potential for wind turbine development and a decentralised heat and power network within Belvedere Employment Area.

3.6 The London Development Agency's *Decentralised Energy and Master-planning Programme*<sup>2</sup> (DEMap) has been designed to identify decentralised energy opportunities in London and is helping Bexley towards these goals.

**Relationships with other environmental sustainability themes**

3.7 **Table 2** summarises the principal relationships between energy management and other environmental sustainability themes. The Action Plan sets out proposed actions, timescales and lead responsibilities to address the issues identified for further action in the table.

**Table 2 Principal relationships between energy and other strategic themes**

Green	positive relationship	G
Amber	potential issues between themes addressed by existing strategies	A
Red	potential issues between themes to be addressed by further action	R

Theme	Relationship	
Climate change	<ul style="list-style-type: none"> <li>Climate change and energy strategies aligned</li> <li>Energy saving measures for street lighting reducing carbon emissions (approx 675 tonnes a year) and reducing costs</li> <li>Highways Assets Management Plan to ensure efficient and sustainable investment in and maintenance of highways assets (highways, pavements, bridges, street-lighting)</li> <li>Renewable energy installations reduce levels of greenhouse gas emissions from energy generation</li> <li>The Sustainable Design and Construction Guide and the Mayor of London's policy to reduce CO<sub>2</sub> by 20% from renewable energy for new development are both helping reduce carbon emissions from new housing development by encouraging new homes to be constructed to Code for Sustainable Homes Level 3</li> <li>National and regional policy on addressing climate change requires local planning authorities to take a more strategic, locally-specific, approach to planning for sustainable energy use and managing the risks associated with flooding</li> </ul>	G
	<ul style="list-style-type: none"> <li>Climate change and energy strategies addressing energy consumption's contribution to greenhouse gas emissions</li> </ul>	A
Water	<ul style="list-style-type: none"> <li>Water storage in wetlands can help alleviate both flooding and drought events</li> <li>Local planning authorities are required to develop policies which seek to secure highly efficient energy development and supply: policies in Bexley's LDF Core Strategy develop these themes at local level</li> <li>Reduced and/or more efficient use of water can reduce demand for energy for processing, transportation and disposal</li> </ul>	G
	<ul style="list-style-type: none"> <li>Delivery of strategy to achieve energy reduction will be challenging</li> </ul>	A
Sustainable transport	<ul style="list-style-type: none"> <li>Transport strategy favours sustainable transport and reducing the need to travel, reducing energy consumption</li> </ul>	G
	<ul style="list-style-type: none"> <li>Delivery of strategy to achieve energy reduction will be challenging</li> </ul>	A

1 [www.bexley.gov.uk/CHttpHandler.ashx?id=7795&p=0](http://www.bexley.gov.uk/CHttpHandler.ashx?id=7795&p=0)

2 [www.londonheatmap.org.uk/Content/home.aspx](http://www.londonheatmap.org.uk/Content/home.aspx)

Theme	Relationship	
Built environment	<ul style="list-style-type: none"> <li>• LDF Core Strategy encourages housing growth in areas that have established infrastructure and services, including energy supply.</li> <li>• Sustainable design and construction policies &amp; guidance in place and review under way</li> <li>• Grants and loans to encourage home energy efficiency</li> <li>• LBB Energy Strategy and reducing consumption through energy efficiency and energy reduction</li> <li>• Carbon for new housing development is being reduced through the Sustainable Design and Construction Guide which encourages housing development to be constructed to Code for Sustainable Homes Level 3</li> <li>• The Mayor of London's policy to reduce CO<sub>2</sub> by 20% from renewable energy for new development is also being implemented</li> </ul>	G
	<ul style="list-style-type: none"> <li>• Development and operation of renewable energy facilities may adversely impact on the built environment</li> <li>• The development of additional new homes in the borough, unless carbon-neutral/negative) will increase overall levels of energy consumption; but the design, construction and operation of new homes to high environmental sustainability levels will reduce average energy consumption and emissions of greenhouse gases</li> <li>• Adapting existing homes to higher environmental sustainability standards ('retrofitting') can reduce average energy consumption and emissions of greenhouse gases but needs investment</li> </ul>	A
Natural environment	<ul style="list-style-type: none"> <li>• Belvedere Green Links Project contributing to sustainable energy to benefit Belvedere Employment Area</li> <li>• Green infrastructure can help to support energy efficiency by increasing the thermal efficiency of buildings, for example green roofs can cool buildings in the summer and insulate them during the winter</li> </ul>	G
	<ul style="list-style-type: none"> <li>• Location and operation of renewable energy facilities may adversely impact natural environment</li> <li>• Potential tension between operation of renewable energy facilities and natural environment needs to be addressed by high standards of operation, monitoring and control</li> </ul>	A
Waste management	<ul style="list-style-type: none"> <li>• Energy recovery from waste can provide electricity and heat that might otherwise be generated from fossil fuels</li> </ul>	G
	<ul style="list-style-type: none"> <li>• Recovering energy from waste is a less environmentally-sustainable method of dealing with waste than some other options within the waste hierarchy; recovering energy from waste is a more environmentally-sustainable method of producing energy than generating energy from fossil fuels.</li> <li>• Risk of increased emissions from waste incineration need to be minimised</li> </ul>	A
	<ul style="list-style-type: none"> <li>• Reducing waste reduces cost and energy consumption involved in transporting and processing waste</li> </ul>	G
Environmental quality	<ul style="list-style-type: none"> <li>• Potential tension between operation of renewable energy facilities and air quality needs to be addressed by high standards of operation, monitoring and control</li> <li>• If not dealt with in accordance with sound environmental practice, the disposal of older, less fuel-efficient (or otherwise less environmentally-sustainable) appliances, equipment and vehicles could adversely impact local and wider environmental quality</li> </ul>	A



## Theme 3

### **Water supply and quality**

#### **Background**

- 4.1 How we use the physical and natural resources of the borough can significantly affect our ability to create sustainable and healthy communities. Enhancing the quality of key physical infrastructure services (transport, water and sewerage, electricity and gas, telecommunications, etc.) will enable positive improvements to the health, safety and well-being of Bexley's residents.
- 4.2 The River Thames forms the northern boundary of the borough. River corridors are important defining features of the borough's landscape, providing open views and significant resources for biodiversity, sport and recreation. They are also potentially valuable for river transport.
- 4.3 The UK is commonly perceived as wet but the population density is high and increasing and rainfall varies across the country. For each person there is relatively little water available, especially in the south-east of England and some urban areas. The Environment Agency (EA) has classified the south-east of England as under serious water stress. The EA's *London State of the Environment Report 2010*<sup>1</sup> concluded that, because population density is high and water is scarcer than anywhere else in England and Wales, water resources in London face the challenge of high demand from a rising population which must be met with a balance in supply. The report argued that action needs to be taken in both existing and future development and should be incorporated into planning strategies. It suggested that new homes need to be built with water efficiency measures taken into consideration in order to reduce demand.
- 4.4 Thames Water has built a desalination plant in London, which takes water from the Thames and turn it into drinking water. The plant is be able to produce an extra 150 million litres of water for London. Thames Water is also helping customers to become more water-wise, for example, by installing water meters, offering free water-saving devices, promoting discounted water butts and promoting the drinking of tap water.

#### **Strategic approach**

- 4.5 National planning guidance (*PPS1: Delivering Sustainable Development*<sup>2</sup>) notes that enhancing and protecting our natural and physical resources (including waterways, water quality and infrastructure) can improve the quality of life by bringing social, economic and environmental benefits to the community.
- 4.6 The *Sustainable Community Strategy* seeks to promote planned and appropriate development to ensure new housing and business is supported by adequate facilities and infrastructure.
- 4.7 The *London Plan* recognises the importance of open spaces and waterways and seeks that borough councils protect, promote and improve access to open spaces. The London Plan provides for waterways by the Blue Ribbon Network with specific policies applying to identified waterways, including the rivers, Thames, Cray and

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2 [www.communities.gov.uk/publications/planningandbuilding/planningpolicystatement1](http://www.communities.gov.uk/publications/planningandbuilding/planningpolicystatement1)

Shuttle.

- 4.8 The draft *London Water Strategy* will complement other plans and strategies by presenting a London-specific view of managing water resources. Its goal is improved water management, in the context of changes including growing population, climate change and ageing water infrastructure. The Strategy promotes working in partnership to protect and conserve water supplies and water resources in order to secure London's needs in a sustainable manner. The Mayor carried out public consultation in 2009<sup>1</sup>.
- 4.9 The quality of open spaces and waterways contribute to the vision of the *LDF Core Strategy*<sup>2</sup> by retaining and enhancing Bexley's suburban character, and enhancing the attractiveness and quality of life offered in the borough.
- 4.10 The LDF Core Strategy includes a policy for using Bexley's resources sustainably, including targets that all new development will be provided with clean water supply and adequate sewerage infrastructure; and to minimise approvals of development schemes contrary to Environment Agency advice. The policy commits the Council to investigate sustainable water management within its buildings and to work with partners to ensure the maintenance and development of physical infrastructure networks, including water and sewerage. The Core Strategy will also encourage housing growth in areas that already have established services and facilities, including water supply and sewerage.
- 4.11 The Core Strategy will include an *Infrastructure Delivery Plan*, setting out what infrastructure or services are needed to deliver the Strategy. The Council will continue to work with key delivery bodies to ensure that the delivery of the Strategy can be achieved.
- 4.12 The *Sustainable Design and Construction Guide SPD*<sup>3</sup> suggests that the effects of climate change on Bexley are likely to further reduce supply of and increase demand for water and encourages building design to incorporate measures to avoid water wastage and water-efficient practices, including the protection and management of groundwater. The Guide also strongly encourages the adoption of water efficient practice in new developments, including water-saving devices and water re-circulation, recycling and water recovery systems; and the use of alternative water sources including grey water recycling and rainwater harvesting.
- 4.13 Bexley is prone to flooding from many sources, and climate change will increase the probability of flooding. The development and implementation of a *Strategic Flood Risk Assessment* (SFRA) is discussed in Theme 1, Climate change.
- 4.14 The River Thames and River Cray are part of the *Blue Ribbon Network*, where development to increase passenger and tourist traffic, transport of freight and general goods and increasing sport and leisure use, particularly in areas of deficiency, should be supported. Bexley is a member of the Mayor of London's River Passenger Transport Services Concordat and is actively supporting the promotion of river transport for both passenger and freight services. Eight of the borough's Thames-side wharves have been safeguarded and it is intended to further develop Erith Pier to encourage the use of the river.

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2 [www.bexley.gov.uk/CHttpHandler.ashx?id=7795&p=0](http://www.bexley.gov.uk/CHttpHandler.ashx?id=7795&p=0)

3 [www.bexley.gov.uk/CHttpHandler.ashx?id=1587&p=0](http://www.bexley.gov.uk/CHttpHandler.ashx?id=1587&p=0)

### Relationships with other environmental sustainability themes

**4.15 Table 3** summarises the principal relationships between water supply and quality and other environmental sustainability themes. The Action Plan sets out proposed actions, timescales and lead responsibilities to address the issues identified for further action in the table.

**Table 3 Principal relationships between water and other strategic themes**

Theme	Relationship	
Green	positive relationship	G
Amber	potential issues between themes addressed by existing strategies	A
Red	potential issues between themes to be addressed by further action	R
Climate change	<ul style="list-style-type: none"> <li>Climate change increasing probability of flooding, addressed by development and implementation of Strategic Flood Risk Assessment (SFRA)</li> <li>Water stress is exacerbated by climate change; measures to relieve water stress and/or improve quality could have other impacts on climate change (eg land and energy demands for desalination)</li> <li>Potential flooding and drought will occur at different times of year than historically, and extreme weather events may become more frequent, as a result of climate change</li> </ul>	G A
Energy	<ul style="list-style-type: none"> <li>Water storage in wetlands can help alleviate both flooding and drought events</li> <li>Local planning authorities are required to develop policies which seek to secure highly efficient energy development and supply: policies in Bexley's LDF Core Strategy develop these themes at local level</li> <li>Reduced and/or more efficient use of water can reduce demand for energy for processing, transportation and disposal</li> <li>National and regional policy on addressing climate change requires LPAs to take a more strategic, locally-specific, approach to planning for sustainable energy use and managing the risks associated with flooding.</li> </ul>	G A
Sustainable transport	<ul style="list-style-type: none"> <li>The River Thames, safeguarded wharves and the River Cray are part of the Mayor of London's Blue Ribbon Network, where development to increase use of passenger and tourist traffic, transport of freight and general goods, increasing sport and leisure use, particularly in areas of deficiency, should be supported</li> </ul>	A
Built environment	<ul style="list-style-type: none"> <li>LDF Core Strategy encourages housing growth in areas that already have established infrastructure and services, including water supply and sewerage</li> <li>Pressure for housing and other development in flood zones addressed by planning policies and flood risk assessments</li> <li>Partnership working led by Drain London to prepare borough level surface water management plans to ensure flood risks from urban watercourses, drainage and main rivers are considered together</li> <li>The requirements of the Flood and Water Management Act will require LBB to approve, adopt and maintain sustainable urban drainage schemes (SUDS) for new developments, improving future sustainability of public surface water drainage infrastructure</li> <li>Appropriate infrastructure is needed to ensure no cross-contamination from foul water entering surface water drainage and river systems</li> </ul>	G A

Theme	Relationship	
Natural environment	<ul style="list-style-type: none"> <li>• Project delivery (eg Shuttle and Cray project) improving water quality, reducing litter, removing fly-tipping and improving the biodiversity values</li> <li>• Belvedere Green Links Project contributing to flood risk management to benefit Belvedere Employment Area and Erith Marshes</li> <li>• Green infrastructure and natural habitats, particularly wetlands, can help alleviate both flood and drought conditions through attenuating flow, storing water and improving water quality</li> <li>• Enhanced understanding of flood patterns and future risks of flooding of local rivers, quality of flood mapping and land drainage powers improving sustainable land management practices</li> </ul>	G
	<ul style="list-style-type: none"> <li>• The requirements of the Flood and Water Management Act will require LBB to approve, adopt and maintain sustainable urban drainage schemes (SUDS) for new developments, improving future sustainability of public surface water drainage infrastructure</li> <li>• The abstraction of water from rivers potentially has an impact on river ecology and aquatic habitats, including by lowering the water table</li> <li>• Partnership working led by Drain London to prepare borough level surface water management plans to ensure flood risks from urban watercourses, drainage and main rivers are considered together</li> </ul>	A
Waste Management	<ul style="list-style-type: none"> <li>• Partnership working needed to ensure flood risks from urban watercourses, drainage and main rivers are considered together</li> </ul>	R
Environmental quality	<ul style="list-style-type: none"> <li>• Project delivery (eg Shuttle and Cray project) improving water quality, reducing litter, removing fly-tipping and improving the biodiversity values</li> <li>• Design and construction of new development will incorporate Sustainable Urban Drainage Systems (SUDS)</li> </ul>	G
	<ul style="list-style-type: none"> <li>• Tension between water/sewage treatment and odours, addressed by improving storage and processing facilities</li> </ul>	A

## Theme 4

### **Sustainable transport**

#### **Background / context**

- 5.1 Road traffic can have a detrimental impact on the quality of life in the borough, through noise, fumes, destruction of valuable open spaces and danger to other road users. Traffic congestion is a growing problem: congestion adds to the overhead costs of people, businesses and organisations, wastes energy and adds to greenhouse gas emissions. Both car ownership and traffic flows within the borough have increased in recent years and Bexley has a relatively high proportion of households with access to a car. Because the borough has lower public transport accessibility levels compared to many other parts of London and higher car usage, Bexley is likely to remain heavily reliant on road transport.
  - 5.2 However, Bexley's position on the transport network and in the Thames Gateway also provides great opportunities. The bus network in the borough is extensive and over 90% of residents live within walking distance of a bus stop.
  - 5.3 Bexley works with Transport for London (TfL) and other partners on programmes to improve public transport infrastructure and other sustainable modes of transport. The improvement of sustainable transport is a priority for the Council and is reflected in corporate policies, particularly *Jump on Board*, the Council's campaign to improve transport choice by improving public transport throughout the borough.
  - 5.4 The only major public transport infrastructure currently proposed to enter the borough is Crossrail to Abbey Wood station, although land between Abbey Wood and Hoo Junction has been identified for a possible extension of Crossrail through the borough to Kent. The Council is campaigning to secure the construction of Crossrail through the borough to Ebbsfleet.
  - 5.5 The River Thames, although a barrier to movement northwards, has huge potential for transport. The LDF Core Strategy includes policy to make the most of opportunities to maximise the use of the River Thames for leisure, recreational and transport uses, including the enhancement of Erith Pier and the safeguarding of wharves. The Mayor, the Port of London Authority and the Council are also committed to retaining and improving viable wharfage on the River Thames within Bexley for freight operations. Eight of the borough's Thames-side wharves have been safeguarded and it is intended to further develop Erith Pier to encourage the use of the River.
  - 5.6 The *London Plan*<sup>1</sup> includes policies for increasing the use of the Blue Ribbon Network for passengers and tourism and for freight. Other freight initiatives within the borough include participation in the Thames Gateway Sub-Regional Freight Quality Partnership. The River Passenger Services Concordat and the *River Thames Pier Plan*<sup>2</sup> illustrate the Mayor's commitment to passenger services on the Thames. Bexley is a member of the Concordat and is actively supporting the promotion of river transport for both passenger and freight services.
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### Strategic approach

- 5.7 The *Sustainable Community Strategy*<sup>1</sup> includes a key objective to “reduce the borough’s carbon footprint through a range of measures including a reduction in car usage and improve public transport”. Among the SCS’s priorities are the need to make Bexley a clean and attractive borough, including by improving traffic management and developing safe and pleasant transport links.
- 5.8 Local Implementation Plans (LIP) set out each borough’s proposals for implementing the *Mayor of London’s Transport Strategy*<sup>2</sup> (MTS) at the local level. A LIP provides a framework for a borough’s own transport policies and objectives and contains details of principal transport projects and a delivery plan. *Bexley’s LIP 2011/12-2013/14*<sup>3</sup>, due to be published later in 2011, will contain programmes to implement the MTS in the borough and include objectives to:
- work towards improved transport systems that support regeneration and economic development and growth needs in the spatial development strategy, improving and enhancing access to jobs, services, health and leisure facilities;
  - secure a more comprehensive, high-quality and integrated public transport system;
  - maximise benefits of regional transport developments;
  - improve and maintain the existing transport infrastructure;
  - support residents, visitors and businesses in choosing sustainable modes of travel and make the transport system accessible;
  - promote the safety and security of road and transport users; and
  - reduce the carbon footprint from transport.
- 5.9 Current *Unitary Development Plan (UDP)* policies seek to reduce the effects of road traffic, offering the choice of public transport, reducing the need for car journeys and the distances driven and improving cycling and pedestrian facilities.
- 5.10 The *LDF Core Strategy*<sup>4</sup> considers how planning policies could reduce car dependency in the borough, by reducing the need to travel and, where travel is necessary, getting people to adopt more sustainable forms of transport (“modal shift”). Sustainability appraisal for the Core Strategy confirmed it contained positive environmental and economic impacts for public transport improvements and that this should be a significant component of any policy to induce modal shift.
- 5.11 An *Asset Management Plan* ensures that the borough’s highways and related structures are kept in a state of good repair. It informs a five-year improvement plan and annual maintenance programme. The Council also has three priority road building schemes: the Belvedere Link Road (the only one with funding secured) will provide significant sustainable transport accessibility improvements as well as regeneration benefits to a major employment area.

### Relationships with other environmental sustainability themes

- 5.12 **Table 4** summarises the principal relationships between sustainable transport and other environmental sustainability themes. The Action Plan sets out proposed actions,

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3 At the time of publication of this Strategy, the Council’s LIP 2011/12-2013/14 was being developed and will be available later in 2011 on the Council’s web-site, [www.bexley.gov.uk](http://www.bexley.gov.uk)

4 [www.bexley.gov.uk/CHttpHandler.ashx?id=7795&p=0](http://www.bexley.gov.uk/CHttpHandler.ashx?id=7795&p=0)



timescales and lead responsibilities to address the issues identified for further action in the table.

**Table 4 Principal relationships between sustainable transport and other strategic themes**

Green	positive relationship	G
Amber	potential issues between themes addressed by existing strategies	A
Red	potential issues between themes to be addressed by further action	R
Theme	Relationship	
Climate change	<ul style="list-style-type: none"> <li>Sustainable transport, delivered through the Transport Strategy and Jump On Board campaign, will contribute to adapting to and mitigating the effects of climate change by reducing greenhouse gas emissions</li> </ul>	G
	<ul style="list-style-type: none"> <li>Regional and local transport plans need to be better aligned</li> <li>Some existing transport choices emit greenhouse gases: increased use will increase emissions</li> </ul>	A
Energy	<ul style="list-style-type: none"> <li>Transport strategy favours sustainable transport and reducing the need to travel, reducing energy consumption</li> <li>Energy saving measures for street lighting reducing carbon emissions (approx 675 tonnes a year) and reducing costs</li> <li>Highways Assets Management Plan to ensure efficient and sustainable investment in and maintenance of highways assets (highways, pavements, bridges, street-lighting)</li> </ul>	G
	<ul style="list-style-type: none"> <li>Delivery of strategy to achieve energy reduction will be challenging</li> </ul>	A
Water	<ul style="list-style-type: none"> <li>The River Thames safeguarded wharves and the River Cray are part of the Mayor of London's Blue Ribbon Network, where development to increase use of passenger and tourist traffic, transport of freight and general goods, increasing sport and leisure use, particularly in areas of deficiency, should be supported</li> </ul>	A
Built environment	<ul style="list-style-type: none"> <li>LDF Core Strategy promotes future housing growth in areas with high public transport accessibility</li> </ul>	G
	<ul style="list-style-type: none"> <li>Many residential areas have low levels of access to public transport (PTAL): LDF policies will ensure trip-generating development proposals are located where there are higher PTAL values</li> <li>New transport infrastructure could impact on the built environment</li> </ul>	A
Natural environment	<ul style="list-style-type: none"> <li>Reduced emissions from lower traffic congestion levels would benefit natural environment</li> <li>A well-designed and connected network of green spaces can help direct people to more sustainable modes of transport such as walking and cycling</li> </ul>	G
	<ul style="list-style-type: none"> <li>Potential use of waterways (particularly River Thames) for more sustainable transport</li> <li>New infrastructure associated with sustainable transport could impact landscapes, habitats and species</li> </ul>	A
Waste management	<ul style="list-style-type: none"> <li>Reduction in total waste and increase in waste recycled/ composted reduces cost and energy consumption involved in transporting waste</li> </ul>	R
Environmental quality	<ul style="list-style-type: none"> <li>Reduced emissions from lower traffic congestion levels would improve air quality</li> <li>Reduced enviro-crime on transport infrastructure and facilities improves quality of travel environment and experience</li> </ul>	G

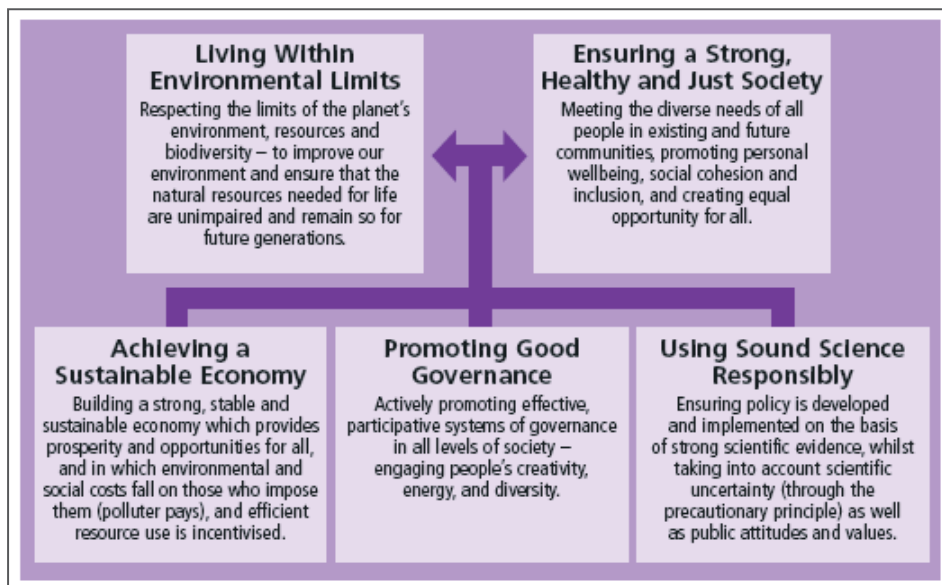
## Theme 5

### The built environment, including housing

#### Background

- 6.1 Governments committed to sustainable development at the Earth Summit in Rio de Janeiro in 1992. The UK's first Sustainable Development Strategy, *A Better Quality of Life*, set out a vision of simultaneously delivering economic, social and environmental outcomes. It used the widely-used definition of sustainable development: “.. those paths of social, economic and political progress that meet the needs of the present without compromising the ability of future generations to meet their own needs.”<sup>1</sup> The updated national Strategy, *Securing the Future*<sup>2</sup>, set out an overarching approach to achieving sustainable development, based on five guiding principles (Figure 1).

Figure 1: Guiding principles to achieve sustainable development in the UK



- 6.2 The Council has statutory duties to promote sustainable development. The principle of sustainable development underpins the statutory spatial planning system. Sustainable development encompasses sustainable economic development and sustainable regeneration. Bexley undertakes Sustainability Appraisal (SA) for most policy documents in its LDF. SA is a tool to help identify sustainable approaches for dealing with key planning issues and environmental concerns. Its purpose is to promote sustainable development through the integration of social, environmental and economic considerations into the plan making process, a key to achieving sustainable development. Considering sustainability during the preparation and adoption of planning documents ensures that the likely social, environmental and economic effects of implementing a plan are taken into account when drawing up policies.
- 6.3 The protection and enhancement of the existing built environment is important to environmental sustainability. Bexley has a range of buildings and areas of special architectural or historic interest where extra attention is given to scenic issues and the

1 from *Our Common Future*, the Report of the 1987 World Commission on Environment and Development (The Brundtland Report).

2 *Securing the Future*, UK Sustainable Development Strategy, 2005 (Cm 6467)

protection of heritage. Buildings of heritage importance can be made sustainable and in some circumstances adapting existing buildings can provide an environmentally-sustainable alternative to demolition and redevelopment.

### Strategic context

- 6.4 The LDF Core Strategy provides a long-term vision for the sustainable development of the borough and contain policies to guide development to achieve this. It will identify what the Council wants the borough to be like by 2026, how we aim to achieve it, who will be responsible for making it happen and how it will be monitored.
- 6.5 Several other LDF documents also directly affect sustainable development:
- *Sustainable Design and Construction Guide*<sup>1</sup> Supplementary Planning Document (SPD), promotes increased energy efficiency, more sustainable design and renewable energy provision.
  - *Design for living*<sup>2</sup> (residential design guide SPD) encourages the development of high quality residential development through design and use of sustainable resources.
  - *Planning Obligations Guidance*<sup>3</sup> SPD helps ensure development supports existing communities and new residents by requiring developers to contribute towards community infrastructure.
  - A future *Thames-side Guidance* SPD will guide the sustainable regeneration of a key employment area.
  - Other future LDF documents will also help ensure that developments are located and designed to provide maximum utilisation of sustainable modes of transport and to ensure that the development meets the needs of all relevant classes of road users.
- 6.6 Planning briefs and other site-specific planning documents promote the sustainable development of several key sites<sup>4</sup>.
- 6.7 Other key documents contribute towards the achievement of sustainable development, notably the *Open Space Strategy* and *Biodiversity Action Plan*.
- 6.8 Bexley is prone to flooding from many sources, and climate change will increase the probability of flooding. The development and implementation of a *Strategic Flood Risk Assessment* (SFRA) is discussed in Theme 1 - Climate change.

### Relationships with other environmental sustainability themes

- 6.9 **Table 5** summarises the principal relationships between the built environment and other environmental sustainability themes. The Action Plan sets out proposed actions, timescales and lead responsibilities to address the issues identified for further action in the table.

1 <http://www.bexley.gov.uk/article/3101/Sustainable-design-and-construction-guide-SPD>

2 <http://www.bexley.gov.uk/article/4053/Design-for-living---Bexleys-residential-design-guide>

3 <http://www.bexley.gov.uk/article/4045/Planning-Obligations-Guidance-SPD>

4 Civic Offices, Bexleyheath ([www.bexley.gov.uk/article/3094/Bexleyheath-Civic-Offices-Planning-Brief-SPD](http://www.bexley.gov.uk/article/3094/Bexleyheath-Civic-Offices-Planning-Brief-SPD)); Lamorbey, Sidcup (<http://www.bexley.gov.uk/article/4046/Lamorbey-Planning-Brief-SPD>); Howbury, Slade Green ([www.bexley.gov.uk/sladegreenregeneration](http://www.bexley.gov.uk/sladegreenregeneration)); and Hill View, Welling (<http://www.bexley.gov.uk/hillview>)

**Table 5 Principal relationships between the built environment and other strategic themes**

Green	positive relationship	G
Amber	potential issues between themes addressed by existing strategies	A
Red	potential issues between themes to be addressed by further action	R

Theme	Relationship	
Climate change	<ul style="list-style-type: none"> <li>Sustainable design and construction policies &amp; guidance in place: sustainable development principles applied to housing and other developments will reduce demand for non-renewable energy, and lower CO<sub>2</sub> emissions</li> <li>Grants and loan schemes encouraging home energy efficiency</li> <li>Council reducing energy consumption in its buildings, through awareness campaigns; installation of efficiency measures, including micro-generation</li> <li>Plants and habitats help buffer local environment from extremes of weather; and absorb CO<sub>2</sub>; initiatives to encourage planting and nurturing of trees include public realm and transport infrastructure improvements, landscaping schemes associated with redevelopment, planning obligations and NWKCP 'free trees' scheme</li> <li>Urban greening can help improve thermal efficiency - and therefore energy efficiency - of the built environment</li> <li>Carbon for new housing development is being reduced through the Sustainable Design and Construction Guide which encourages housing development to be constructed to Code for Sustainable Homes Level 3. The Mayor of London's policy to reduce CO<sub>2</sub> by 20% from renewable energy for new development is also being implemented</li> </ul>	G
	<ul style="list-style-type: none"> <li>Policies and guidance with regard to sustainable design and construction need a review and updating to reflect emerging technologies, national and regional policy, etc; applying them to housing and other developments will further reduce demand for non-renewable energy, and lower CO<sub>2</sub> emissions</li> <li>Need to balance need for climate change adaptation/mitigation measures in existing local communities with obligations to preserve/enhance residential/suburban and historic character of those communities</li> </ul>	A
	<ul style="list-style-type: none"> <li>Need to adapt existing homes and other buildings to make them more energy efficient and contribute to climate change mitigation</li> </ul>	R
Energy	<ul style="list-style-type: none"> <li>LDF Core Strategy encourages housing growth in areas that already have established infrastructure and services, including energy supply</li> <li>Sustainable design and construction policies and guidance in place and review under way</li> <li>Grants and loans to encourage home energy efficiency</li> <li>LBB Energy Strategy helping to reduce consumption through energy efficiency and energy reduction</li> <li>Energy saving measures for street lighting reducing carbon emissions (approx 675 tonnes a year) and reducing costs</li> <li>Highways Assets Management Plan to ensure efficient and sustainable investment in and maintenance of highways assets (highways, pavements, bridges, street-lighting)</li> </ul>	G
	<ul style="list-style-type: none"> <li>Development and operation of renewable energy facilities may adversely impact on the built environment</li> <li>The development of additional new homes in the borough, unless carbon-neutral/negative) will increase overall levels of energy consumption; but the design, construction and operation of new homes to high environmental</li> </ul>	A

Theme	Relationship	
Energy	<p>sustainability levels will reduce average energy consumption and emissions of greenhouse gases</p> <ul style="list-style-type: none"> <li>Adapting existing homes to higher environmental sustainability standards ('retrofitting') can reduce average energy consumption and emissions of greenhouse gases but needs investment</li> </ul>	
Water	<ul style="list-style-type: none"> <li>LDF Core Strategy encourages housing growth in areas that already have established infrastructure and services, including water supply and sewerage</li> <li>Pressure for housing and other development in flood zones addressed by planning policies and flood risk assessments</li> <li>Partnership working led by Drain London to prepare borough level surface water management plans to ensure flood risks from urban watercourses, drainage and main rivers are considered together</li> <li>The requirements of the Flood and Water Management Act will require LBB to approve, adopt and maintain sustainable urban drainage schemes (SUDS) for new developments, improving future sustainability of public surface water drainage infrastructure</li> <li>Appropriate infrastructure is needed to ensure no cross-contamination from foul water entering surface water drainage and river systems</li> </ul>	A
Sustainable transport	<ul style="list-style-type: none"> <li>LDF Core strategy promotes future housing growth in areas with high public transport accessibility</li> <li>Many residential areas have low levels of access to public transport (PTAL): LDF policies will ensure trip-generating development proposals are located where there are higher PTAL values</li> <li>New transport infrastructure could impact on the built environment</li> </ul>	G A
Natural environment	<ul style="list-style-type: none"> <li>Delivery of Green Grid initiative involves creation of new public spaces and enhancement of existing green spaces</li> <li>New and improved open spaces can be provided as part of planning obligations upon appropriate new developments</li> <li>Strategic approaches to balance development pressures with protecting natural environment, eg grazing marshes, are addressing areas deficient in nature conservation</li> <li>Private gardens collectively make up the largest and most important wildlife habitats in Bexley</li> <li>Principles underpinning options for future growth in LDF Core Strategy include development on previously developed land to protect the majority of biodiversity resources, open spaces and Green Belt/Metropolitan Open Land</li> <li>New development that does not meet the criteria for sustainable development may compromise the extent and connectivity of the natural environment</li> </ul>	G A
Waste management	<ul style="list-style-type: none"> <li>Sustainable development principles include designing-in waste minimisation and facilitating recycling and composting</li> <li>Adverse impact of waste management facilities on visual amenity of residential areas and town centres, addressed by design and siting</li> </ul>	R A

Theme	Relationship
Environmental quality	<ul style="list-style-type: none"><li data-bbox="359 257 1380 324">• Policies to minimise pollution and promote contaminated land reclamation help enhance environmental quality</li><li data-bbox="359 324 1380 425">• Sustainable development principles include: designing-out crime/potential for enviro-crime; and designing-in sustainability, encouraging good environmental practice.</li><li data-bbox="359 425 1380 504">• Initiatives to address environmental quality address industrial legacy and provide safe and clean streets, town centres and open spaces</li></ul>



## Theme 6

### **The natural environment**

#### **Background**

- 7.1 Bexley is one of London's greenest boroughs. Parks and open spaces are central to the character and identity of the borough; the network of open space sites totals almost 1,400 hectares.
- 7.2 The borough has a wide range of habitats, including eight sites of metropolitan importance, 36 sites of borough importance, and ten sites of local importance for nature conservation. Areas of metropolitan importance are of the highest priority for protection and in Bexley comprise: the River Thames and tidal tributaries; the River Cray; Erith Marshes; Crayford Marshes; Crayford Rough; Ruxley Gravel Pits; Lesnes Abbey Wood; Chalk Wood; and Joydens Wood. However, the borough also contains areas deficient in nature conservation.
- 7.3 Parks and open spaces are central to the character and identity of the borough. Open spaces, when considered as a wider network of green infrastructure, provide benefits which contribute to the quality of life of local residents, balancing the urban environment and helping enhance a sense of place, buffering against the extreme weather events, providing a focal point for healthy exercise, community interaction and food-growing. Green spaces and tree-lined streets attract people to live, work, visit and invest in Bexley.

#### **Strategic approach**

- 7.4 The *Sustainable Community Strategy* seeks to protect and provide for local wildlife and diversity.
- 7.5 Biodiversity is provided for in the UDP, and the LDF will include policies to replace the UDP policies. *Bexley's Biodiversity Action Plan*<sup>1</sup> (BAP) sets out actions for protecting, conserving and enhancing, species and habitats and ensures local action supports UK and regional plans. The BAP was reviewed in 2010 and a revised version is due for adoption later in 2011, following public consultation. The Council will actively monitor the implementation of the revised BAP.
- 7.6 The UDP and LDF also contain policies to resist inappropriate development on land in the metropolitan green belt and on metropolitan open land.
- 7.7 The *LDF Core Strategy* contains policies to contain development to previously developed land; to protect open spaces and address open space deficiencies; and ensure that Bexley remains a 'green' borough.
- 7.8 *Sustainability Appraisal* for the *LDF Core Strategy* identified the importance of recognising and providing for the borough's natural resources through its evaluation of emerging policies.
- 7.9 *Strategic Environmental Assessment* (SEA) is undertaken in respect of LDF planning policy documents which are likely to have significant effects on the environment. LDF documents likely to have a significant effect on the management of a designated

habitat are also subject to Appropriate Assessment (AA).

- 7.10 The *Open Space Strategy*<sup>1</sup> considers a variety of different types of open space. The Council is implementing the Open Space Strategy Action Plan and monitoring progress.
- 7.11 The *Managing the Marshes Vision and Strategy* addresses the potential of Bexley's significant remaining areas of grazing marsh bordering the River Thames (containing nationally-significant wildlife habitats); the range of demands on them; the needs of the local and wider communities; and the need to restore a sustainable ecosystem. New development will both make the Marshes' green space even more precious and increase demand for open space.
- 7.12 The vision for the *East London Green Grid Strategy*<sup>2</sup> is to create a network of interlinked, multi-purpose open spaces with good connections between them and areas where people live and work, sustainable transport, the green belt and the River Thames.

**Relationships with other environmental sustainability themes**

**7.13 Table 6** summarises the principal relationships between the natural environment and other environmental sustainability themes. The Action Plan sets out proposed actions, timescales and lead responsibilities to address the issues identified for further action in the table.

**Table 6 Principal relationships between the natural environment and other strategic themes**

Green	positive relationship	G
Amber	potential issues between themes addressed by existing strategies	A
Red	potential issues between themes to be addressed by further action	R

Theme	Relationship	
Climate change	<ul style="list-style-type: none"> <li>• Plants and habitats help buffer local environment from extremes of weather; and absorb CO<sub>2</sub>; initiatives to encourage planting and nurturing of trees include public realm and transport infrastructure improvements, landscaping schemes associated with redevelopment, planning obligations and NWKCP 'free trees' scheme; climate change adaptation and mitigation measures can benefit the natural environment</li> </ul>	G
	<ul style="list-style-type: none"> <li>• If designed and managed properly as a coherent network, green infrastructure (the network of green spaces, places and features that thread through and surround urban areas and connect town to country, including parks, gardens, allotments, cemeteries, trees, green roofs and natural habitats) can provide a practical response to the challenges of climate change mitigation and adaptation (eg, flood management, urban heat islands), encourage walking and cycling and boost local food production</li> </ul>	A
Energy	<ul style="list-style-type: none"> <li>• Belvedere Green Links Project contributing to sustainable energy to benefit Belvedere Employment Area</li> <li>• Green infrastructure can help to support energy efficiency by increasing the thermal efficiency of buildings, for example green roofs can cool buildings in the summer and insulate them during the winter</li> </ul>	G

1 <http://www.bexley.gov.uk/article/4039/Open-Space-Strategy-and-Technical-Paper>

2 East London Green Grid: Framework Report, Thames Gateway London Partnership, 2005

Theme	Relationship	
Energy (contd.)	<ul style="list-style-type: none"> <li>• Location and operation of renewable energy facilities may adversely impact natural environment</li> <li>• Potential tension between operation of renewable energy facilities and natural environment needs to be addressed by high standards of operation, monitoring and control</li> </ul>	A
Water	<ul style="list-style-type: none"> <li>• Project delivery (eg Shuttle and Cray project) improving water quality, reducing litter, removing fly-tipping and improving the biodiversity values</li> <li>• Belvedere Green Links Project contributing to flood risk management to benefit Belvedere Employment Area and Erith Marshes</li> <li>• Green infrastructure and natural habitats, particularly wetlands, can help alleviate both flood and drought conditions through attenuating flow and storing water, and improving water quality</li> <li>• Enhanced understanding of flood patterns and future risks of flooding of local rivers, quality of flood mapping and land drainage powers improving sustainable land management practices</li> <li>• The requirements of the Flood and Water Management Act will require LBB to approve, adopt and maintain sustainable urban drainage schemes (SUDS) for new developments, improving future sustainability of public surface water drainage infrastructure</li> <li>• The abstraction of water from rivers potentially has an impact on river ecology and aquatic habitats, including by lowering the water table</li> <li>• Partnership working led by Drain London to prepare borough level surface water management plans to ensure flood risks from urban watercourses, drainage and main rivers are considered together</li> </ul>	G
Sustainable transport	<ul style="list-style-type: none"> <li>• Reduced emissions from lower traffic congestion levels would benefit natural environment</li> <li>• A well-designed and connected network of green spaces can help direct people to more sustainable modes of transport such as walking and cycling</li> <li>• Potential use of waterways (particularly River Thames) for more sustainable transport</li> <li>• New infrastructure associated with sustainable transport could impact landscapes, habitats and species</li> </ul>	G
Built environment	<ul style="list-style-type: none"> <li>• Delivery of Green Grid initiative involves creation of new public spaces and enhancement of existing green spaces</li> <li>• New and improved open spaces can be provided as part of planning obligations upon appropriate new developments</li> <li>• Strategic approaches to balance development pressures with protecting natural environment, eg grazing marshes, addressing areas deficient in nature conservation</li> <li>• Private gardens collectively make up the largest and most important wildlife habitats in Bexley</li> <li>• Principles underpinning options for future growth in LDF Core Strategy include development on previously developed land to protect the majority of biodiversity resources, open spaces and Green Belt/Metropolitan Open Land</li> <li>• New development that does not meet the criteria for sustainable development may compromise the extent and connectivity of the natural environment</li> </ul>	G
Waste management	<ul style="list-style-type: none"> <li>• Potential tension between operation of energy-from-waste facilities and natural environment addressed by high standards of operation, monitoring and control</li> </ul>	A

Theme	Relationship
Environmental quality	<ul style="list-style-type: none"><li data-bbox="352 253 1380 320">• Review of Biodiversity Action Plan and implementation of revised initiatives will help to improve habitats and address environmental quality issues</li><li data-bbox="352 320 1380 432">• Delivery of environmental programmes addressing Environmental quality (Managing the Marshes, enviro-crime; Shuttle &amp; Cray projects, water quality, litter, fly-tipping)</li><li data-bbox="352 432 1380 512">• Potential tension between operation of energy-from-waste facilities and air quality addressed by high standards of operation, monitoring and control</li></ul>

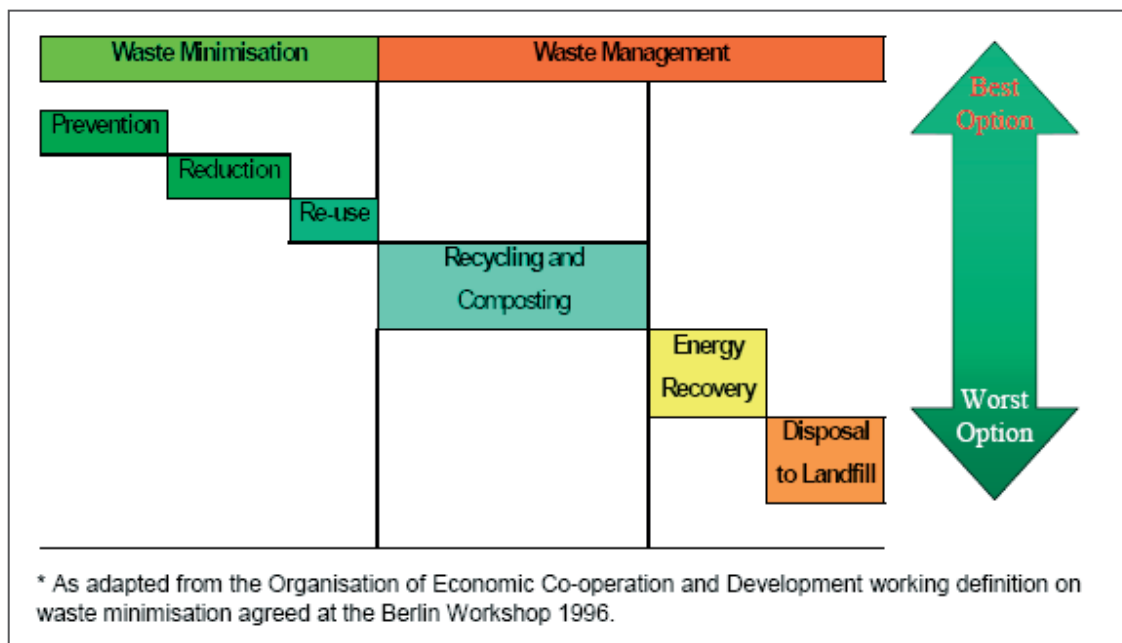
## Theme 7

### Waste minimisation and management

#### Background

- 8.1 Waste needs to be managed in more sustainable ways to ensure that obligations and targets under national legislation and European directives are met. The cost of waste disposal is set to rise substantially.
- 8.2 The Council is responsible for the collection and disposal of the borough's waste. We need to work with residents and businesses to minimise the creation of waste and the amount that goes to landfill, which is environmentally and economically the most expensive option. The Council needs to plan properly for the future and give waste the priority it deserves and the investment it needs.
- 8.3 The waste hierarchy (Figure 2) provides a framework of how waste management can be made more sustainable. The aim is to move up the hierarchy from a reliance on disposal towards increased recovery, recycling and composting to re-use and reduction to prevention. A mix of options is needed to arrive at the most balanced environmental, social and economic solution.

**Figure 2: Waste hierarchy**



#### Strategic approach

- 8.4 Bexley's *Waste Management Strategy*<sup>1</sup> outlines how the Council will manage waste in a more sustainable manner, through an integrated set of policies, plans and a flexible mix of solutions. A key challenge is to find a solution to treat residual waste: the Council aims to recover energy from as much residual waste as possible. The Strategy is therefore designed to minimise the amount of waste sent to landfill and the impact of Landfill Tax. The Strategy will help Bexley meet European landfill directive targets and avoid financial penalties.

<sup>1</sup> [www.bexley.gov.uk/CHttpHandler.ashx?id=5164&p=0](http://www.bexley.gov.uk/CHttpHandler.ashx?id=5164&p=0)

- 8.5 In accordance with the principles set out in the Waste Management Strategy, the Council's practices for waste, whether collected door-to-door or at re-use and recycling centres, include composting efficiently with adequate oxygen which creates no methane. Green waste is composted outside in wind-rows; food and garden waste is composted in in-vessel plants.
- 8.6 The London Plan sets out waste apportionments for each borough and the broad pattern of waste management types. Bexley, Bromley, Greenwich, Lewisham and Southwark councils have produced a draft *Joint Waste Technical Paper* to meet their combined London Plan waste apportionment requirements. Joint working allows borough councils to pool their waste apportionments and use shared management facilities.
- 8.7 Bexley already has enough existing waste sites in the borough to meet its own waste capacity allocation. The Local Development Framework Core Strategy provides that, in addition, the Council may work with other London boroughs to make the most efficient use of any surplus capacity after the London Plan apportionments have been applied. Figures set out in the draft replacement London Plan (Oct 2009) suggest that there will be a surplus capacity within the southeast London boroughs of over 100,000 tonnes per annum.

### Relationships with Other Environmental Sustainability Themes

- 8.8 **Table 7** summarises the principal relationships between waste management and other environmental sustainability themes. The Action Plan sets out proposed actions, timescales and lead responsibilities to address the issues identified for further action in the table.

**Table 7 Principal relationships between the waste management and other strategic themes**

Theme	Relationship	
Green	positive relationship	G
Amber	potential issues between themes addressed by existing strategies	A
Red	potential issues between themes to be addressed by further action	R
Climate change	<ul style="list-style-type: none"> <li>Increases in amount of waste recycled/composted and reductions in amount of waste both reducing increase in waste going to landfill, thereby reducing greenhouse gas emissions</li> <li>Commitment to protecting key infrastructure assets such as Crossness Sewage Treatment Works from the risks of flooding contributing to flood risk management</li> </ul>	G
Energy	Energy recovery from waste can provide electricity and heat that might otherwise be generated from fossil fuels	G
	Recovering energy from waste is a less environmentally-sustainable method of dealing with waste than some other options within the waste hierarchy; recovering energy from waste is a more environmentally-sustainable method of producing energy than generating energy from fossil fuels.	A
	<ul style="list-style-type: none"> <li>Risk of increased emissions from waste incineration need to be minimised</li> <li>Reducing waste reduces the cost and energy consumption involved in transporting and processing waste</li> </ul>	G
Water	Partnership working needed to ensure flood risks from urban watercourses, drainage and main rivers are considered together	R



Theme	Relationship	
Sustainable transport	<ul style="list-style-type: none"> <li>Reduction in total waste and increase in waste recycled/ composted reduces the cost and energy consumption involved in transporting waste</li> </ul>	G
Built environment	<ul style="list-style-type: none"> <li>Sustainable development principles include designing-in waste minimisation and facilitating recycling and composting</li> </ul>	G
	<ul style="list-style-type: none"> <li>Adverse impact of waste management facilities on visual amenity of residential areas and town centres, addressed by design and siting</li> </ul>	A
Natural environment	<ul style="list-style-type: none"> <li>Review of the Biodiversity Action Plan and implementation of revised initiatives will help to improve habitats and address environmental quality issues</li> <li>Delivery of environmental programmes addressing environmental quality (Managing the Marshes, enviro-crime; Shuttle and Cray projects, water quality, litter, fly-tipping)</li> </ul>	G
	<ul style="list-style-type: none"> <li>Potential tension between operation of energy-from-waste facilities and natural environment addressed by high standards of operation, monitoring and control</li> </ul>	A
Environmental quality	<ul style="list-style-type: none"> <li>Potential tension between operation of energy-from-waste facilities and air quality addressed by high standards of operation, monitoring and control</li> </ul>	A

## Theme 8

### ***Environmental quality, pollution and crime***

#### **Background**

- 9.1 The Council encourages the redevelopment of previously-developed land ('brownfield land') rather than undeveloped ('greenfield') land. However, brownfield sites are more likely to be affected by the presence of contamination, due to historic industrial processes, waste disposal or accidental spillages. This results in the potential to cause harm to health, the environment, property, groundwater, lakes, ponds and surface water. The Council has a statutory duty to identify land in the borough which may be contaminated. Remediation is generally dealt with by imposing conditions on development, as part of the planning process. The Environment Agency (EA) is involved where contamination of controlled waters<sup>1</sup> is an issue.
- 9.2 The Council also has statutory duties to investigate nuisance relating to pollution, including noise and air quality; and to review air quality in the borough. The Council inspects all potentially-polluting processes in the borough and deals with over 3,000 pollution-related complaints each year. The EA deals with water quality and has responsibility for larger, more complex, operations.
- 9.3 Successful, thriving and environmentally-sustainable communities are characterised by streets, parks and open spaces that are safe; and by clean, green and attractive environments that local people take pride in. Enviro-crime, criminal activity and anti-social behaviour against the environment, including fly-tipping, litter, graffiti, abandoned cars, can undermine the positive benefits a good environment makes to the everyday lives of residents and to visitors and people working in the borough. Illegal activity at this sort also undermines and impacts on legitimate businesses.
- 9.4 The Council is committed to improving the quality of the physical environment of our streets and parks to help create a sense of security and well being of those who live and work in the borough. Services include:
- tackling graffiti, including removal, regular cleaning of shopping areas, parks and subways; partnership working on education and information sharing; covert surveillance; and green screens;
  - keeping streets clear of abandoned and nuisance vehicles by close working with other agencies; and "take back" service for vehicles;
  - licensed waste disposal sites to reduce fly tipping; large item collection service.
  - regular street cleansing; mobile response teams and leaf-clearing teams;
  - regular street lighting maintenance and improvements programmes; reactive and proactive repairing of street light failures and damaged street furniture;
  - regular patrols and fixed penalties to deter dog fouling; exclusion of dogs from playgrounds; dog-waste bins; and
  - quick removal of fly-posting; confiscation of materials; prosecution of persistent offenders.

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<sup>1</sup> 'controlled waters' are all rivers, canals, lakes, ground waters, estuaries and coastal waters to three nautical miles from the shore (Water Resources Act 1991)

### Strategic Approach

- 9.5 The Council's *Contaminated Land Strategy* helps manage the approach to dealing with land contamination.
- 9.6 Other regional strategies have been produced to improve air quality and address ambient noise issues. The *London Plan* supports major brownfield sites being decontaminated and redeveloped to support new housing and employment growth, particularly in the Thames Gateway. This ensures recreational links and open spaces can be protected or enhanced.
- 9.7 The Council has declared the whole of Bexley an Air Quality Management Area and is implementing its adopted *Borough Air Quality Action Plan*.
- 9.8 The *Environmental Liveability Strategy* sets out the services the Council provides, how these are measured and what improvements are planned to enhance the quality of life for residents in Bexley.

### Relationships with other environmental sustainability themes

- 9.9 **Table 8** summarises the principal relationships between environmental quality and other environmental sustainability themes. The Action Plan sets out proposed actions, timescales and lead responsibilities to address the issues identified for further action in the table.

**Table 8 Principal relationships between the environmental quality and other strategic themes**

Theme	Relationship	
Green	positive relationship	G
Amber	potential issues between themes addressed by existing strategies	A
Red	potential issues between themes to be addressed by further action	R
Theme	Relationship	
Climate change	<ul style="list-style-type: none"> <li>No issues</li> </ul>	G
Energy	<ul style="list-style-type: none"> <li>Potential tension between operation of renewable energy facilities and air quality needs to be addressed by high standards of operation, monitoring and control</li> <li>If not dealt with in accordance with sound environmental practice, the disposal of older, less fuel-efficient (or otherwise less environmentally-sustainable appliances, equipment and vehicles could adversely impact local and wider environmental quality</li> </ul>	A
Water	<ul style="list-style-type: none"> <li>Project delivery (eg Shuttle and Cray project) improving water quality, reducing litter, removing fly-tipping and improving the biodiversity values</li> <li>Design and construction of new development will incorporate Sustainable Urban Drainage Systems (SUDS)</li> </ul>	G
	<ul style="list-style-type: none"> <li>Tension between water/sewage treatment and odours, addressed by improving storage and processing facilities</li> </ul>	A
Sustainable transport	<ul style="list-style-type: none"> <li>Reduced emissions from lower traffic congestion levels would improve air quality</li> <li>Reduced enviro-crime on transport infrastructure and facilities improves quality of travel environment and experience</li> </ul>	G

Theme	Relationship	
Built environment	<ul style="list-style-type: none"> <li>• Policies to minimise pollution and promote contaminated land reclamation help enhance environmental quality</li> <li>• Sustainable development principles include: designing-out crime/potential for enviro-crime; and designing-in sustainability, encouraging good environmental practice</li> <li>• Initiatives to address environmental quality address industrial legacy and provide safe and clean streets, town centres and open spaces</li> </ul>	G
Natural environment	<ul style="list-style-type: none"> <li>• Initiatives to address environmental quality help to improve habitats</li> <li>• Delivery of environmental programmes addressing environmental quality, eg Managing the Marshes (enviro-crime); Shuttle &amp; Cray project (water quality, litter, fly-tipping)</li> <li>• Review of Biodiversity Action Plan and implementation of revised Plan</li> <li>• Potential tension between operation of energy-from-waste facilities and natural environment addressed by high standards of operation, monitoring and control</li> </ul>	G
Waste management	<ul style="list-style-type: none"> <li>• Potential tension between operation of energy-from-waste facilities and air quality addressed by high standards of operation, monitoring and control</li> </ul>	A

## *Implementation and monitoring*

### **Implementation**

- 10.1 The purposes of this Strategy include highlighting potential tensions between aspirations and priorities; and identifying policy gaps to balance priorities to help resolve those tensions. To help this analysis, each thematic chapter has summarised the principal relationships between the theme in question and each other theme. The majority of these relationships are positive, confirming that complementary benefits are being derived from different themes.
- 10.2 In some cases, however, there are potential issues between themes which need to be addressed, either by existing strategies or by further action. The **Action Plan (Appendix A)** sets out the actions required to address these potential issues and will help achieve the vision and key priorities of the Strategy.
- 10.3 The Action Plan includes only initiatives that are deliverable within available resources. It identifies responsibility for taking forward action items and timescales. The Council will make an annual report to the Environmental Sustainability Board on delivery of the Action Plan.

### **Monitoring**

- 10.4 One function of the Environmental Sustainability Board is, on behalf of the Partnership for Bexley, to oversee performance against action plans and performance indicators relating to environmental sustainability. This Strategy brings together elements from other strategies, each of which has its own implementation arrangements which are not reproduced here.
- 10.5 The Council sets objectives and targets for the performance of its services in the Bexley Business Process, the Corporate Plan, service plans and work plans. The Council monitors performance principally through quarterly monitoring statements for each Cabinet Member. They include performance against performance indicators across the range of strategies and services that impact upon environmental sustainability in Bexley.

## Appendix A Action Plan 2011-2014

Environmental Sustainability Strategy Action Plan 2011 - 2014				
No. Issue	Themes	Actions	Timescale	LBB Lead
1	Climate change and energy strategies should address the contribution energy consumption makes to greenhouse gas emissions	<p>Energy &amp; Climate change</p> <p>Adopt, publish and implement Corporate Energy Strategy:</p> <ul style="list-style-type: none"> <li>• Adoption</li> <li>• Publication</li> <li>• Implementation</li> <li>• Progress reports on implementation to ESB</li> </ul> <p>Develop, adopt, publish and implement revised Bexley Climate Change Strategy</p> <ul style="list-style-type: none"> <li>• ES Board</li> <li>• Public consultation</li> <li>• Adoption / Publication</li> <li>• Implementation</li> <li>• Progress reports on implementation to ES Board</li> </ul>	<p>Dec 2010</p> <p>Spring 2011 to 2014</p> <p>Annually</p> <p>Jan 2011</p> <p>March 2011</p> <p>Spring / summer 2011 to 2014</p> <p>Annually</p>	Home & Environment
2	Water stress is exacerbated by climate change; measures to relieve water stress and/or improve quality could have other impacts on climate change (eg, land and energy demands for desalination)	<p>Climate change &amp; water</p> <p>Appropriate actions will be included in Bexley's revised Climate Change Strategy and Action Plan</p> <p>Development proposals to relieve water stress / improve water quality would be assessed for environmental sustainability as part of the planning process, in line with SD&amp;C Guide</p> <p>New developments will be constructed to higher levels of Code, and will consume less water. SD&amp;C Guide includes guidance on minimising water consumption in new developments.</p>	<p>Publication due later in 2011</p> <p>ongoing</p> <p>ongoing</p>	see actions
3	Potential flooding and drought will occur at different times of year than historically and extreme weather events may become more frequent, as a result of climate change	<p>Climate change &amp; water</p> <p>Appropriate actions will be included in Bexley's revised Climate Change Strategy and Action Plan</p> <p>Bexley Strategic Flood Risk Assessment (SFRA, Oct 2010) supports development of future DPDs which will enable delivery of jobs and homes; and facilitates evaluation of flood risk for significant specific development sites. SD&amp;C Guide supports flood risk assessment and mitigation.</p>	<p>Publication due later in 2011</p> <p>DPDs: Consultation Summer 2012; Submission Dec 2012; Adoption Nov 2013</p>	see actions

Abbreviations used throughout the table:  
 LBB - London Borough of Bexley; Divisions: SP&D - Strategic Planning and Development; DC - Development Control; T&T - Traffic and Transport; R&MP - Regeneration and Major Projects



## Appendix A Action Plan 2011-2014

Environmental Sustainability Strategy Action Plan 2011 - 2014					
No. Issue	Themes	Actions	Timescale	LBB Lead	
4	Regional and local transport plans need to be better aligned	Climate change & sustainable transport	Appropriate actions will be included in Bexley's revised Climate Change Strategy and Action Plan Bexley's Local Implementation Plan (LIP) 2011/12-2013/14 will support local implementation of London Mayor's Transport Strategy.	Publication due later in 2011 Submission April/Jun 2011 Approval and implementation from 2011	see actions T&T
5	Some existing transport choices emit greenhouse gases: increased use of these modes will increase emissions	Climate change & sustainable transport	Appropriate actions will be included in Bexley's revised Climate Change Strategy and Action Plan Bexley will seek to influence people's choices of transport towards sustainable modes by promoting more sustainable options in transport programmes in its Local Implementation Plan 2011/12-2013/14	Publication due later in 2011 Submission April/Jun 2011 Approval and implementation from 2011	see actions T&T
6	Sustainable design and construction policies and guidance need to be reviewed and updated; applying to housing and other developments will further reduce demand for non-renewable energy and lower emissions	Climate change & built environment	Appropriate actions will be included in Bexley's revised Climate Change Strategy and Action Plan LDF Core Strategy policies on climate change mitigation and adaptation, using resources sustainably and integrated and sustainable transport being developed and implemented Future DPDs will enable LBB to move to Level 4 of the Code for Sustainable Homes (for residential development) and BREEAM 'Excellent' level (for commercial development).	Publication due later in 2011 Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011 Consultation Summer 2012; Submission Dec 2012; Adoption Nov 2013	SP&D
7	Need to balance requirements for climate change adaptation/mitigation measures in existing local communities with obligations to preserve/enhance the residential/suburban and historic character of those communities	Climate change & built environment	Appropriate actions will be included in Bexley's revised Climate Change Strategy and Action Plan LDF Core Strategy policies on climate change mitigation and adaptation and managing the built environment being developed and implemented. Development proposals assessed for environmental sustainability as part of the planning process, in line with SD&C Guide.	Publication due later in 2011 Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011 ongoing	SP&D

## Appendix A Action Plan 2011-2014

Environmental Sustainability Strategy Action Plan 2011 - 2014				
No. Issue	Themes	Actions	Timescale	LBB Lead
8	Green infrastructure <sup>1</sup> can provide, if designed and managed properly as a coherent network, a practical response to climate change challenges, including: flood management; addressing urban heat islands; encouraging walking and cycling; and boosting local food production.	Climate change & natural environment  Review and implementation of revised Biodiversity Action Plan (BAP)  Monitor implementation of Open Space Strategy  LDF Core Strategy policies on managing the natural environment include protecting, enhancing and promoting green infrastructure (policy CS17)	Adoption Spring 2011; implement and monitoring ongoing thereafter  Annual report produced  Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011	SP&D  SP&D  SP&D
9	Delivery of Transport Strategy to achieve energy reductions will be challenging	Energy & sustainable transport  Bexley will seek to achieve energy reductions through the delivery of transport programmes included in its Local Implementation Plan 2011/12-2013/14	Submission April 2011 Approval and implementation from 2011	T&T
10	The development of additional new homes in the borough, unless carbon-neutral/negative) will increase overall levels of energy consumption; but the design, construction and operation of new homes to high environmental sustainability levels will reduce average energy consumption and emissions of greenhouse gases	Energy & built environment  Development proposals for additional new homes assessed for environmental sustainability as part of the planning process, in line with SD&C Guide	ongoing	SP&D, DC
11	Adapting existing homes to higher environmental sustainability standards ('retrofitting') can reduce average energy consumption and emissions of greenhouse gases but needs investment	LDF Core Strategy policies on climate change mitigation and adaptation include requiring the use of sustainable design and construction techniques in new homes, and investigating opportunities for zero carbon developments and decentralised energy networks in specific growth areas (policy CS08 d,e,f).  LDF Core Strategy policies on achieving sustainable development, and on adapting to and mitigating the effects of climate change, include encouraging sustainably retrofitting existing building stock and improving the efficiency of housing stock by educating residents in methods to reduce energy in the home (policies CS01a, CS08c, CS08d).	Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011	SP&D
		Future DPDs may reinforce policy in respect of partial new development	Consultation Summer 2012; submission Dec 2012; adoption Nov 2013	SP&D
		Review advice and information to local residents and businesses	to be determined (tbd)	tbd

<sup>1</sup> The network of green spaces, places and features that thread through and surround urban areas and connect town to country, including parks, gardens, allotments, cemeteries, trees, green roofs and natural habitats

## Appendix A Action Plan 2011-2014

Environmental Sustainability Strategy Action Plan 2011 - 2014					
No. Issue	Themes	Actions	Timescale	LBB Lead	
12	Development and operation of renewable energy facilities may adversely impact on the built environment	Energy & built environment	LDF Core Strategy policies on achieving sustainable development and sustainable waste management include ensuring renewable energy facilities are located where they do not adversely impact on the built environment (policies CS01j, CS09b, CS20).  Development proposals for renewable energy facilities are assessed for environmental sustainability as part of the planning process, in line with SD&C Guide	Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011  ongoing  SP&D, DC	SP&D
13	Location and operation of renewable energy facilities may adversely impact on the natural environment	Energy & natural environment	LDF Core Strategy policies on achieving sustainable development will help ensure renewable energy facilities are located where they do not adversely impact natural environment (eg Policy CS01g, protecting designated areas from inappropriate development)  Development proposals for renewable energy facilities are assessed for environmental sustainability as part of the planning process, in line with SD&C Guide	Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011  ongoing  SP&D, DC	SP&D
14	Potential tension between operation of renewable energy facilities and natural environment needs to be addressed by high standards of operation, monitoring and control	Energy & natural environment	High standards of operation, monitoring and control will address potential tension between the operation of energy-from-waste facilities and the natural environment	ongoing	Operators and regulators (Environment Agency - EA)
15	Recovering energy from waste is a less environmentally-sustainable method of managing some waste than other options within the waste hierarchy (recycling and composting and waste minimisation); but recovering energy from waste is a more environmentally-sustainable method of producing energy than generation from fossil fuels. Risk of increased emissions from waste incineration need to be minimised	Energy & waste management	Waste Management Strategy provides framework for balanced mix of options for waste minimisation and management; and targets for increasing recycling/composting and reducing waste going to landfill  The Riverside energy-from-waste facility will use the most efficient available technology to recover energy from waste, with minimal risk of emissions, and has potential to provide district heating for local developments  LDF Core Strategy policies on climate change mitigation and adaptation include investigating opportunities for decentralised energy networks in specific growth areas (Policy CS08f). Future DPDs have potential to help determine detailed proposals for heat networks	Targets and timescales from Waste Strategy  Operational in 2011  Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011	Waste  RRRL  SP&D

## Appendix A Action Plan 2011-2014

Environmental Sustainability Strategy Action Plan 2011 - 2014					
No. Issue	Themes	Actions	Timescale	LBB Lead	
15	Recovering energy from waste ... (as above)	Energy & waste management	Heat-mapping feasibility studies/proposals will provide evidence of potential supply of/demand for heat networks to help determine best locations and implementation	High level feasibility study comm.-issioned: report Mar 2011	SP&D
16	Potential tension between operation of renewable energy facilities and air quality needs to be addressed by high standards of operation, monitoring and control	Energy & environmental quality	High standards of operation, monitoring and control will address potential tension between the operation of energy-from-waste facilities and air quality	ongoing	Operators and regulators (Environment Agency - EA)
17	If not dealt with in accordance with sound environmental practice, the disposal of older, less fuel-efficient (or otherwise less environmentally-sustainable appliances, equipment and vehicles could adversely impact local and wider environmental quality	Energy & environmental quality	Requirements of Waste Electrical and Electronic Equipment Directive (WEEE) Directive being implemented through the Waste Management Strategy and network of local Bring Banks and Reuse & Recycling Centres	ongoing	Waste
18	The River Thames, safeguarded wharves and the Rivers Cray and Shuttle are part of the Mayor of London's Blue Ribbon Network, where development to increase use of passenger and tourist traffic, transport of freight and general goods, increasing sport and leisure use, particularly in areas of deficiency, should be supported	Water & sustainable transport	LDF Core Strategy policies on achieving an integrated and sustainable transport system include improving efficiency and promoting the sustainability of freight movement, and protection of viable safeguarded Thames wharves (Policy CS15f); policies on protecting, enhancing and promoting green infrastructure (inc open spaces and waterways) include supporting projects to promote the enhancement of the Blue Ribbon Network, and the biodiversity value of the Thames, Cray, Shuttle and their tributaries; and river and waterway restoration included in the Open Space Strategy	Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011	SP&D
			Through its Local Implementation Plan 2011/12-2013/14, Bexley will support the Blue Ribbon Network relating to the navigable waterways of London: the River Cray is one of the other 17 components of the Network. Bexley is a member of the River Passenger Transport Services Concordat and is actively supporting the promotion of River transport for passenger and freight services. Eight of the Borough's wharves have been safeguarded. It is intended to further develop the Erith Pier to encourage the use of the River.	Submission Apr-Jun 2011; Approval and implementation from 2011	T&T

## Appendix A Action Plan 2011-2014

Environmental Sustainability Strategy Action Plan 2011 - 2014					
No. Issue	Themes	Actions	Timescale	LBB Lead	
18	The River Thames, safeguarded wharves and the Rivers Cray and Shuttle ... (as above)	Water & sustainable transport	Implement River Shuttle river-keeper project Contribute towards securing continued funding for River Cray river-keeper project; implement if funding secured	to 2013 spring 2011	R&MP R&MP
19	Partnership working needed to ensure flood risks from urban watercourses, drainage and main rivers are considered together	Water, built environment & natural environment	Work with Drain London (leading partnership work), Thames Water, the Environment Agency and other London Boroughs to prepare joint urban drainage strategy for London, including local surface water management plan, and respond to preliminary flood risk assessment	2011	Engineers, SP&D
20	Appropriate infrastructure is needed to ensure that contaminated water does not enter surface water drainage and river systems	Water, built environment & natural environment	Landowners are responsible for ensuring no contaminated water enters surface water drainage and river systems. The Environment Agency is responsible for main rivers	ongoing	Appropriate service for Council-owned land
21	Water supply is critical to achieving sustainable development and high quality built environment	Water & natural environment	LDF Core Strategy policies will help focus new housing and other development where adequate infrastructure, including adequate water supply, exists or can be provided, including investigating options for sustainably managing water supplies and resources (Policies CS01, 09b, 09c & 21).	Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011	SP&D
22	The abstraction of water from rivers potentially has an impact on river ecology and aquatic habitats, including by lowering the water table	Water & natural environment	Working in partnership with the Environment Agency, LBB seeks to identify opportunities to improve specific river ecologies and aquatic habitats and minimise the impact of water abstraction	ongoing	SP&D, Highways, R&MP
23	Issues of sewage storage and potential for run-off to pollute water courses need to be addressed	Water & waste management	In a London-wide context, Thames Water are delivering the Thames Tideway Improvements project and associated sustainability and environmental mitigation measures, which will address these issues and minimise pollution Assess safeguarded waste storage sites to determine residual flood risks as part of development of Site Specific Allocations DPD	Thames Tunnel: Phase 2 public consultation from Sept 2011; Planning application 2012 Consultation summer 2012; submission Dec 2012; adoption Nov 2013	Liaison with Thames Water SP&D
24	There is potential tension between water/sewage treatment and odours, which needs to be addressed by improving storage and processing facilities	Water & environmental quality	The installation of a new enhanced anaerobic digester at Crossness Sewage Treatment Works will replace the liming process and increase capacity. The Thames Tideway Improvements project will provide new treatment facilities for storm water	Digester 2014; Tideway as above	Liaison with Thames Water



## Appendix A Action Plan 2011-2014

Environmental Sustainability Strategy Action Plan 2011 - 2014					
No. Issue	Themes	Actions	Timescale	LBB Lead	
25	Sustainable design and construction of new development needs to incorporate Sustainable Urban Drainage Systems (SUDS)	Water & environmental quality	Implement new statutory duty to adopt Sustainable Urban Drainage Systems (SUDS) requirements with regard to when detailed requirements known	Ongoing from 2012 (date to be confirmed)	SP&D, DC, Engineers
26	Many residential areas have low levels of access to public transport (PTAL)	Sustainable transport & built environment	LBB's LIP 2011/12-2013/14 will highlight inadequacies in public transport facilities in the Borough and will actively seek the provision of high-quality public transport infrastructure	Submission Apr-Jun 2011; Approval and implementation from 2011	T&T
27	New transport infrastructure could impact on the built environment	Sustainable transport & built environment	LDF Core Strategy policies on achieving an integrated and sustainable transport system include working to achieve a comprehensive, high quality, safe, integrated and sustainable transport system, making the most of existing and proposed infrastructure and an expanded role for public transport (Policy CS15)	Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011	SP&D
			LDF Core Strategy policies on reducing the need to travel and the impact of travel include: ensuring developments are equipped to benefit from new technology, promoting the provision of live/work accommodation and promoting travel awareness campaigns, travel plans, etc (Policy CS16a, b, c)	Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011	SP&D
			Development proposals for transport infrastructure facilities are assessed for environmental sustainability as part of the planning process	ongoing	SP&D, DC
			LBB's LIP 2011/12-2013/14 will confirm the Council's support for the use of the River Thames for sustainable passenger and freight transport, including the development of Erith Pier	Submission Apr-Jun 2011; Approval and implementation from 2011	T&T



## Appendix A Action Plan 2011-2014

Environmental Sustainability Strategy Action Plan 2011 - 2014					
No. Issue	Themes	Actions	Timescale	LBB Lead	
28	Waterways (particularly River Thames) have potential for greater use for more sustainable transport	Sustainable transport & natural environment	Through its Local Implementation Plan 2011/12-2013/14, Bexley will support the Blue Ribbon Network relating to the navigable waterways of London: the River Cray is one of the other 17 components of the Network. Bexley is a member of the River Passenger Transport Services Concordat and is actively supporting the promotion of River transport for passenger and freight services. Eight of the Borough's wharves have been safeguarded. It is intended to further develop the Erith Pier to encourage the use of the River	Submission Apr-Jun 2011; Approval and implementation from 2011	LBB (T&T) TfL
29	New infrastructure associated with sustainable transport could impact landscapes, habitats and species	Sustainable transport & natural environment	LDF Core Strategy policies on achieving an integrated and sustainable transport system include improving efficiency and promoting the sustainability of freight movement, and protection of viable safeguarded Thames wharves (Policy CS15f)	Submission Apr 2011; EIP Aug 2011; Adoption Dec 2011	LBB (SP&D)
30	New development that does not meet the criteria for sustainable development may compromise the extent and connectivity of the natural environment	Built & natural environment	Development proposals for transport infrastructure facilities are assessed for environmental sustainability as part of the planning process	ongoing	LBB (SP&D, DC)
31	Potential adverse impact of waste management facilities on visual amenity of residential areas and town centres needs to be addressed by design and siting	Built environment and waste management	Development proposals are assessed for environmental sustainability as part of the planning process	ongoing	LBB (SP&D, DC)
			Development proposals for waste management facilities are assessed for environmental sustainability, including visual amenity, as part of the planning process	ongoing	LBB (SP&D, DC)

## Appendix B

### **A picture of Bexley - the physical context for environmental sustainability**

The London Borough of Bexley is in south east London. It covers an area of 61 square kilometres between the River Thames to the north and the A20 trunk road to the south. Bexley is bordered on the west and south by the London boroughs of Greenwich and Bromley; and on the east by Dartford Borough and Sevenoaks District, both in the County of Kent. Barking & Dagenham and Havering London boroughs and Thurrock adjoin Bexley to the north, across the River Thames. Map 1 (next page) shows the context and physical geography of the borough. The rest of this appendix discusses how this influences environmental sustainability.

#### **1. The River Thames**

##### ***General***

- 1.1 The River Thames forms the largest area of open space in Bexley. It has the status of metropolitan importance for nature conservation in the borough's Unitary Development Plan.
- 1.2 Historically, the Thames strongly influenced the location of Bexley's industries. The industrial areas that stretch along the Thames, east of London, including north Bexley, were the location for many of the capital's dirtiest industries. They have left behind a legacy of environmental degradation, including contaminated land. The need to address this legacy was recognised in the designation of the Thames Gateway as the largest regeneration project in Europe. Bexley has been regenerating its Thames-side communities and industrial areas for more than a decade and has secured significant amounts of investment from the EU, the Government and the Mayor of London's agencies.
- 1.3 The River Thames continues to influence development in Bexley. Future plans for the Thames include the transfer of some 500,000 tonnes of waste a year, from 2011, to the Riverside energy-from-waste facility in Belvedere. The Thames has considerable potential for transport (particularly the movement of bulk goods and materials) and for amenity uses.

##### ***The Thames at Erith***

- 1.4 Erith has a distinctive location on the River Thames. The town has an exciting future, capitalising on its riverside location. The Invest Bexley Board, Bexley's regeneration partnership, is continuing the regeneration and revitalisation of Erith with new homes and jobs, consolidating and expanding the retail offer and maximising the recreational potential of the river. Erith Yacht Club has invested more than £2.3 million<sup>1</sup> in a new clubhouse on the Thames, enabling more local people to take part in sailing and significantly enhance opportunities for recreational use of the River Thames.
- 1.5 The River Thames determined the location of Crossness Sewage Works in Thamesmead. Its historic Beam Engine House and modern sewage sludge incinerator, with its distinctive silhouette, are both important parts of Bexley's built environment. The Heritage Lottery Fund and the Department for Communities and

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<sup>1</sup> funded by the Department for Communities and Local Government (CLG), as part of a programme of support for new sports facilities to provide a legacy from the London 2012 Olympic and Paralympic Games

Map 1: Context and physical geography



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Local Government (CLG) are boosting voluntary efforts to restore to their former glory the Beam Engine House and its spectacular Victorian machinery, the world's largest rotative beam engines.

### ***Thames grazing marshes***

- 1.6 Bexley contains significant amounts of the last remaining areas of grazing marsh in Greater London. Erith Marsh forms the westernmost part of an extensive area of marshland extending eastwards along the Thames and North Kent coast. Crayford Marsh is ecologically and geographically a single entity with Dartford Marsh but separated from it by the Rivers Darent and Cray. These marshes were historically part of the same landscape but have become fragmented.
- 1.7 Crossness also houses an important nature reserve, a 20 hectare site containing one of the largest reedbeds in Bexley; other habitats include a network of ditches and open water, scrub and rough grassland. Other areas include Crossness Southern Marshes, a proposed wetland on the RRRL energy-from-waste facility in Belvedere, and sites in Thamesmead.
- 1.8 Major new development, in the context of future growth in Thames Gateway, will simultaneously make the remaining green space provided by the marshes even more precious and increase demand for open space. Strengthening the linkages between the marshes, the River Thames and local neighbourhoods all contribute to green infrastructure and is key to the delivery of sustainable communities. The *Managing the Marshes Vision and Strategy*<sup>1</sup> and delivery programme set includes: restoring the Marshes (including protecting wildlife and biodiversity); improving public access; managing water levels; and reducing enviro-crime in these important areas to environmental sustainability.

### ***The Thames and transport***

- 1.9 The Thames provides an important transport corridor but forms a significant barrier to the movement of people and goods and restricts the opportunities for people living south of the River to take up employment in the developing areas north of the Thames. The London Plan encourages new facilities in appropriate locations and safeguards existing wharves. National Cycle Route 1, between London and the Channel ports, follows the River Thames for most of its length in Bexley. Cycle and pedestrian links make it accessible from local communities. To support passenger use of the Thames, the LDA, in conjunction with TfL, London River Services and the GLA, produced a River Passenger Services Concordat, which was signed by the Mayor of London in 2009. As one of the Concordat's first actions, the *River Thames Pier Plan*<sup>2</sup> was published in 2009.
- 1.10 The Thames Estuary Partnership has published *Management Guidance for the Thames Estuary*<sup>3</sup> and the Thames East Strategy, which promotes a holistic approach to the delivery of the necessary transport, utilities and environmental infrastructure in relation to the river and its hinterland.

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1

2

3 Management Guidance for the Thames Estuary: Today's Estuary for Tomorrow, Thames Estuary Partnership



## 2. River Valleys

### *General*

- 2.1 Bexley's river valleys, principally the River Cray and River Shuttle, provide important natural habitats and linear open spaces, including the Green Chain and London Loop recreational walking routes. The River Cray runs through the urban centres of Footh Cray, Bexley Village and Crayford - where former industrial uses have altered its course - residential areas and open spaces. Much of the eastern and southern sides of the borough, along the Cray Valley, is open land, including significant amounts of metropolitan green belt, metropolitan open land, urban open space, and areas of metropolitan, borough or local importance for nature conservation (see also Crayford Marsh above).

### *Crayford*

- 2.2 The River Cray was the foundation for industrial development in Crayford. Like the Thames-side industrial areas, the legacy of this industrial development is a run-down and deteriorating post-industrial environment. The Council and its partners have therefore developed a long-term Strategy and Action Plan for the renewal of Crayford town centre<sup>1</sup> to enable Crayford to offer the scale of housing growth and employment it could sustain. Proposed developments will provide high quality links between the industrial, retail and residential areas of the town. Crayford's public realm is being revitalised to make the town centre a place with a positive, coherent image.

### *Non-riparian Bexley*

- 2.3 The area of the borough south of the Thames Flood Plain and west of the Cray Valley is formed from the dip slope of the North Downs. This undulating terrain ends abruptly in the north with a steep slope running west to east from Lesnes Abbey Woods to Erith. This higher ground provides significant areas of open space: Lesnes Abbey Woods and Frank's Park.
- 2.4 Bexley's topography, particularly the escarpment between Deptford and Dartford, and its relative position in relation to Central London have influenced transport routes through the borough. The principal routes, three railway lines and three A-Class roads, run radially west-east into Central London. Bexley has no north-south railway lines and relatively few road crossings of the radial railway lines. Road routes become easily congested and cross-borough travel north-south is therefore difficult.

## 3. Flood risk, prevention and management

### *The challenge*

- 3.1 Bexley's topography means that certain parts of the borough have the potential to be flooded, which can have significant implications for environmental sustainability. According to the Environment Agency (EA): "The Thames Estuary is an area where the risk of flooding is particularly high. The Thames region is increasingly at risk from flooding due to higher mean sea levels, increased rainfall and tide ranges and a greater number and intensity of storm events. The Thames must also contend with the gradual 'sinking' of the southeastern tip of the British Isles."<sup>2</sup>
- 3.2 Much of the north of Bexley lies within the Thames flood plain and is protected by the flood defences installed downstream of the Thames Barrier. London's tidal

<sup>1</sup> <http://www.bexley.gov.uk/article/3098/Crayford-Strategy-and-Action-Plan>

<sup>2</sup>

defences offer a high level of protection from today's flood risks and were designed to protect London from surge tides<sup>1</sup> until the year 2030. However, the effects of climate change, such as sea level rise and increased rainfall and storm frequency, mean that London and the Thames Estuary will be at greater risk from flooding in future years. Also, many flood risk areas are undergoing development and regeneration. Without mitigation, more people, buildings and infrastructure would be exposed to the risk of flooding in the future. Slight modifications could extend the useful life of London's flood defences. In addition, the borough's other river valleys have the potential for flash flooding. **Map 2** shows the areas of Bexley that would be at risk of flooding without existing flood defences or other mitigation measures or both.

### ***The response***

- 3.3 The Greater London Authority (GLA) has produced a draft *Regional Flood Risk Appraisal (RFRA) for London*<sup>2</sup>. The RFRA provides a strategic overview of flood risk across London and contains region-wide and borough-specific recommendations for boroughs to consider when undertaking their own Strategic Flood Risk Assessments (SFRAs) to accompany their Local Development Documents.
- 3.4 The Thames Gateway London Partnership (TGLP) has published a sub-regional *SFRA for East London*<sup>3</sup> to inform strategic planning in East London by guiding appropriate development locations and type according to variations in flood risk. The East London SFRA provides an analysis of the main sources of flood risk in the area, together with a means of testing development allocations and existing planning policies for flood risk management. A *Catchment Flood Management Plan* for EA's North Kent Region is also proposed.
- 3.5 Bexley has developed a borough-wide SFRA which will support the London Regional FRA and the East London SFRA. Bexley's SFRA identifies the main areas of the borough at risk from flooding and assesses the appropriate mitigation responses within growth areas. Site-specific flood risk assessments are carried out as part of the development of appropriate Local Development Framework documents and development proposals for major sites.
- 3.6 The Council and EA are addressing the flood risks affecting Bexley's river valleys. A *Strategic Flood Risk Assessment for Crayford town centre* will guide future development to minimise the risk of flooding and mitigate its effects. Site-specific flood risk assessments will be produced where the Council is proposing to develop planning briefs or other planning documents which will seek to set out the broad arrangement of future uses within an area at risk of flooding.

### ***Thames Estuary 2100***

- 3.7 The EA has recognised the need for a long-term, strategic look at London's flood defences. It has developed *Thames Estuary 2100*<sup>4</sup> to determine the appropriate level of flood protection needed for London and the Thames Estuary for the next 100 years and help shape the way in which future flood defence schemes are designed and managed. The consultation on Thames Estuary 2100 set out long term

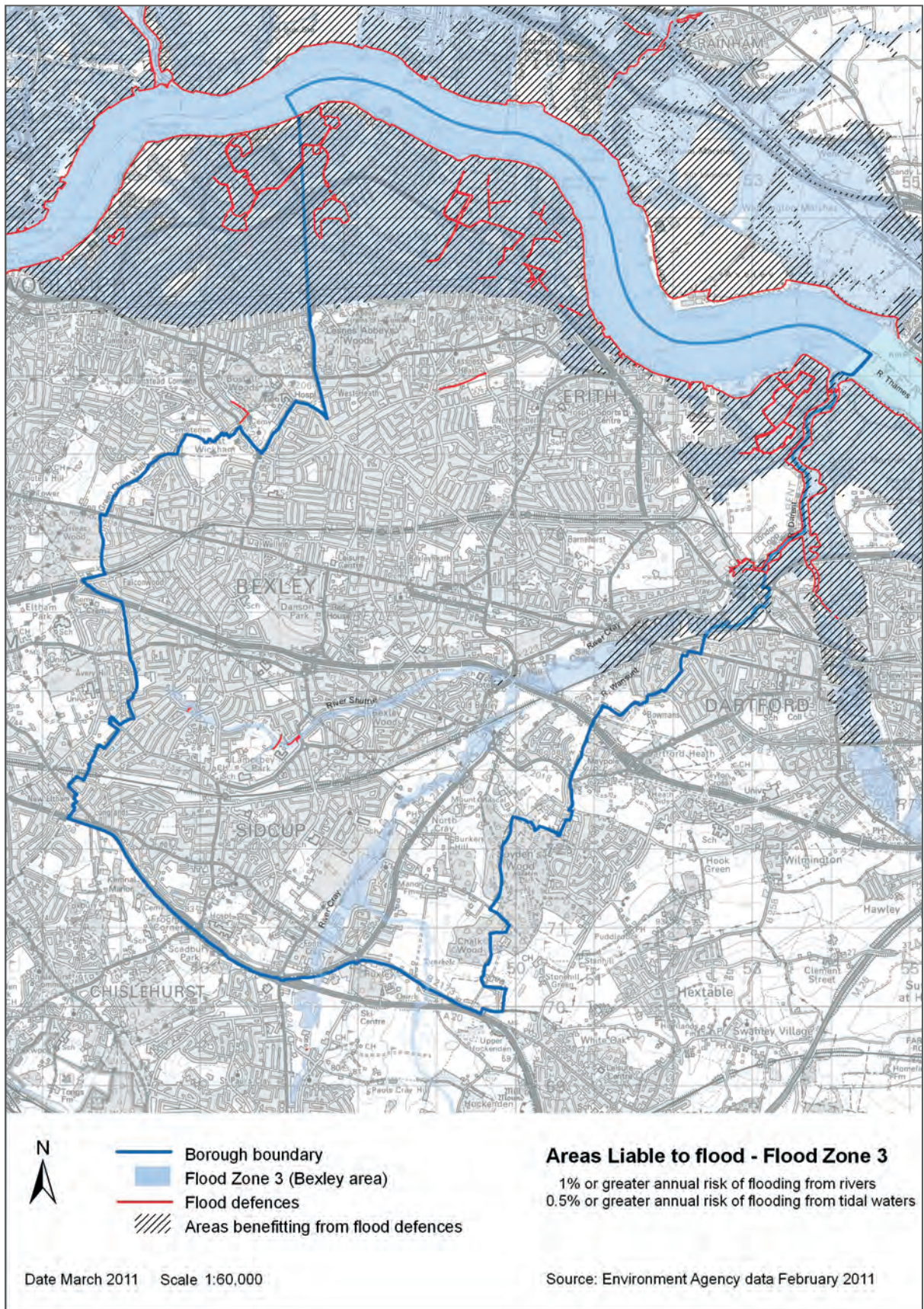
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<sup>1</sup> Surge tides are humps of water which move eastward up the Thames Estuary when certain weather conditions occur out in the North Sea.

<sup>2</sup>  
<sup>3</sup>  
<sup>4</sup>



Map 2: Flood liability and defended areas



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flood management plans for the region<sup>1</sup>. The EA has said that the existing Thames Barrier will provide sufficient protection up to 2070, based on current climate change predictions. The plan also discusses the loss of habitats due to sea level rises.

- 3.8 In 2010, the EA Board approved the TE2100 Plan and submitted it to Defra. The initial response from Government confirmed that they were content with the strategic approach and policy fit of the Plan and authorised the EA to prepare an implementation plan and Treasury business cases. This work is due for completion by March 2012.

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<sup>1</sup> [www.environment-agency.gov.uk/research/library/consultations/106100.aspx](http://www.environment-agency.gov.uk/research/library/consultations/106100.aspx);

## Appendix C

### **Principal local, national and regional strategies and legislation**

The Environmental Sustainability Strategy sits alongside other local (Bexley Council), regional and national strategies (as listed below) and draws together all the strands of environmental sustainability contained within them. This appendix discusses these strategies and the legislative context.

#### **Local (Bexley) plans and strategies**

Sustainable Community Strategy  
 Development Plan (Unitary Development Plan and Local Development Framework)  
 Invest Bexley, Regeneration Framework and Borough Regeneration Framework  
 Economic and Employment Development Strategy  
 Asset Management Plan  
 Climate Change Strategy  
 Corporate Energy Strategy  
 Transport Strategy (Local Implementation Plan)  
 Waste Management Strategy  
 Biodiversity Action Plan  
 Parks Strategy  
 Contaminated Land Strategy

#### **Regional strategies**

##### *Mayor of London's Strategies:*

London Plan (spatial development strategy)  
 Transport Strategy and East London sub-regional Transport Strategy  
 Economic Development Strategy  
 Climate Change Adaptation Strategy  
 Climate Change Mitigation and Energy Strategy  
 Air Quality Strategy  
 East London Green Grid Strategy  
 Ambient Noise Strategy  
 Biodiversity Strategy  
 Municipal and Business Waste Management strategies  
 Water Strategy  
 Environmental frameworks (various)

##### *Other regional strategies:*

London Biodiversity Action Plan  
 Management Guidance for the Thames Estuary  
 Thames East Strategy

#### **National strategies**

Planning policy statements and planning policy guidance notes (PPS; PPG)  
 UK Sustainable Development Strategy  
 UK Climate Change Programme  
 National Air Quality Strategy  
 UK Biodiversity Action Plan  
 National Waste Strategy for England  
 Renewable Energy Strategy

### **1. Local strategies**

- 1.1 The two local strategies that provide the context for all themes in the Environmental Sustainability Strategy are the Sustainable Community Strategy and the Development Plan.

### ***Sustainable Community Strategy***

- 1.2 Bexley's Local Strategic Partnership, the Partnership for Bexley, has developed a vision for Bexley's future set out in the Sustainable Community Strategy (SCS). The SCS sets out plans to develop a strong, sustainable and cohesive community through:
- Building safer and stronger communities
  - Developing healthier communities for adults
  - Developing services for children and young people
  - Promoting economic development and the environment
- 1.3 The SCS's vision for promoting economic development and the environment is of Bexley as a place that: is clean and attractive; adapts to a growing population; and has a strong economy. To achieve this, the Partnership aims to:
- Deliver a range of housing options to suit different household incomes and sizes, with well-designed public buildings and spaces
  - Reduce the borough's carbon footprint through a range of measures including a reduction in car usage and improved public transport
  - Develop a strong and sustainable local economy through high quality education and training, and creation of job opportunities
  - Maintain a high quality environment, ensuring Bexley is a clean and attractive borough that promotes the feeling of safety among its residents

This Strategy has been prepared to help the Partnership for Bexley deliver these aims.

### ***Development Plan***

- 1.4 The borough's Development Plan comprises: the ***London Plan***, the Mayor of London's spatial development strategy (see below); the ***Unitary Development Plan*** (UDP); and the ***Local Development Framework*** (LDF). The Development Plan includes policies to promote sustainable development; to make land available for local employment, housing development and open space; to protect the built and natural environment, including the metropolitan green belt and metropolitan open land; and to reduce the need to travel and promote sustainable modes of transport.
- 1.5 The LDF is a portfolio of planning documents setting out the spatial strategy for Bexley. It aims to join policies for land use and development with social, economic and environmental policies that influence the nature of places and how they function. The documents within the LDF will replace the UDP.
- 1.6 The ***LDF Core Strategy*** will provide a long-term vision for the sustainable development of the borough and contain policies to guide development to achieve this. It will identify what the Council wants the borough to be like by 2026, how we aim to achieve it, and who will be responsible for making it happen. The thematic chapters above have considered LDF documents which directly affect environmental sustainability.
- 1.7 The Council undertakes ***Sustainability Appraisal*** (SA) for most documents within the LDF. SA is a tool to help identify sustainable approaches for dealing with key planning issues and environmental concerns. Its purpose is to promote sustainable development through the integration of social, environmental and economic considerations into the plan-making process. Considering sustainability during the preparation of planning documents ensures that the likely social, environmental and

economic effects of implementing a plan are taken into account when drawing up policies.

- 1.8 The Council also undertakes **Strategic Environmental Assessment (SEA)** of plans and programmes which are likely to have significant effects on the environment. SEA includes preparing a report on the likely significant environmental quality of the plan or programme; consulting environmental authorities and the public; and taking these into account in the preparation of the plan or programme. LDF documents likely to have a significant effect on the management of a designated habitat are also subject to **Appropriate Assessment**.

#### ***Other local strategies***

- 1.9 In addition to the local strategies particularly relevant to each theme discussed in the main document:
- The ***Invest Bexley Regeneration Framework***<sup>1</sup> provides the vision for a change in local regeneration activity that will shape physical, social and cultural change in the borough to 2016 and beyond. The ***Borough Regeneration Framework***<sup>2</sup> sets out the regeneration priorities of the Council and its partners. It includes a vision that by 2016 Bexley will be a sustainable borough; the location of choice for all its residents and for employers; and better connected to the rest of London and the Thames Gateway.
  - ***Knowing Bexley, the Economic and Employment Development Strategy***<sup>3</sup>, seeks to put “knowledge” central to developing the local business base and providing local people with opportunities to access employment. Further regeneration of Bexley’s employment areas and town centres will help meet the community’s aspirations; sow the seeds of dynamic and sustainable employment; and help make Bexley a location of choice.
  - The ***Asset Management Plan*** reinforces the importance of managing the Council’s property portfolio and aims to ensure that the property the Council holds is required for operational, social or investment purposes linked to corporate objectives. It ensures that decisions are made taking account of objectives, impacts on service delivery, suitability and sustainability, and financial implications.

## **2. Regional strategies**

- 2.1 The Mayor of London’s strategies have a significant impact on environmental sustainability in Bexley. Since his election in 2008, Boris Johnson has developed new strategies, principally:
- The ***London Plan***<sup>4</sup> is the overall strategic plan for London. It sets out an integrated economic, environmental, transport and social framework for the development of the capital over the next 20 to 25 years. Following public consultation between October 2009 and January 2010, the Draft Replacement London Plan was subject to Examination in Public (EiP)<sup>5</sup> between June and December 2010.
  - The revised ***Mayor’s Transport Strategy***<sup>6</sup> was published in May 2010 and

1 <http://www.bexley.gov.uk/article/3769/Invest-Bexley-Regeneration-Framework-2007-2016>

2 <http://www.bexley.gov.uk/article/3770/Bexleys-Regeneration-Framework>

3

4

5 The EiP Panel was due to publish its report in early 2011, with adoption following probably in the autumn. The report had not been published at the time of publication of this Strategy 6

describes how Transport for London and its partners, including the borough councils, will deliver the Mayor's vision that "London's transport system should excel among those of world cities, providing access to opportunities for all its people and enterprises, achieving the highest environmental standards and leading the world in its approach to tackling urban transport challenges of the 21st century".

- The revised **Mayor's Economic Development Strategy**<sup>1</sup> was published in May 2010 and sets out the Mayor's ambitions for economic development of the capital; provides the GLA and strategic organisations with a clear vision, analysis of the economy and policy directions; and clarifies roles and responsibilities for all parties making major contributions to developing London's economy.
- The **Draft London Climate Change Adaptation Strategy**<sup>2</sup> identifies the key risks to London and Londoners and proposes a range of actions to manage them. Following public consultation February to May 2010. Amend to reflect position at time of publication.
- The **Draft London Climate Change Mitigation and Energy Strategy**<sup>3</sup> sets out the Mayor's vision for climate change mitigation and energy in London that: "by 2025 London is one of the world's leading low carbon cities". Public consultation was held between October 2010 and January 2011. Amend to reflect position at time of publication.
- **Cleaning London's Air, the Mayor's Air Quality Strategy**<sup>4</sup> was published in December 2010. It details how the Mayor aims to protect Londoners' health and increase their quality of life by cleaning up London's air. It sets out a framework for improving London's air quality and measures aimed at reducing emissions from transport, homes, offices and new developments, as well as raising awareness of air quality issues.
- The **Prospectus for London, the Low Carbon Economy**<sup>5</sup> analyses policies on energy efficiency, recycling, low carbon vehicles and decentralised energy. It concludes that energy and climate change policies in the capital could create 10,000-15,000 jobs and contribute £600 million a year to the economy.
- The **East London Green Grid Strategy**<sup>6</sup> seeks to create a network of interlinked, multi-purpose open spaces with good connections between them and areas where people live and work, sustainable transport, the green belt and the River Thames.

2.2 Strategies produced by the Mayor between 2000 and 2008, Ken Livingstone, and not yet reviewed by the current Mayor include:

- **Ambient Noise Strategy**: promotes active management of long-term noise.
- **Biodiversity Strategy**: seeks to ensure there is no overall loss of habitats and that more open spaces are created and made accessible.
- **Municipal Waste Strategy**: identifies policies and proposals for reducing household waste and increasing recycling.
- **Draft Business Waste Management Strategy**
- **Water Strategy**: examines how Londoners could use water resources more



effectively.

- **Environmental Frameworks:** animal welfare, and trees and woodlands frameworks.

2.3 In addition to the Mayor's strategies:

- The **London Biodiversity Action Plan**<sup>1</sup> was published by the London Biodiversity Partnership
- **Management Guidance for the Thames Estuary**<sup>2</sup> and the **Thames Strategy East**<sup>3</sup> were published by the Thames Estuary Partnership.

### 3. National strategies

3.1 Current, relevant national strategies are:

- **Spatial Planning Policies**<sup>4</sup> Planning Policy Guidance Notes (PPGs) and Planning Policy Statements (PPSs) provide guidance on planning policy and the operation of the planning system. They explain the relationship between planning policies and other policies with an important bearing on development and land use.
- **UK Sustainable Development Strategy, *Securing the Future***<sup>5</sup> sets principles that local priorities and policy should respect: living within environmental limits; a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.
- **UK Climate Change Programme, *Action in the UK***<sup>6</sup> sets out the former Government's policies and priorities for action in the UK and internationally and provides for an annual report to Parliament on climate change.
- **National Air Quality Strategy**<sup>7</sup> sets out a way forward for work and planning on air quality issues, standards and objectives; introduces a new policy framework for tackling fine particles; and identifies potential new national policy measures.
- **UK Biodiversity Action Plan**<sup>8</sup> describes the UK's biological resources and provides a detailed plan for their protection. Includes 391 species action plans, 45 habitat action plans and 162 local biodiversity action plans, with targeted actions.
- **National Waste Strategy for England**<sup>9</sup> sets out overall objective for waste policy as: "protection of human health and the environment by producing less waste and by using it as a resource wherever possible". Maps out high-level direction of travel and implementation plan.
- **Renewable Energy Strategy**<sup>10</sup> argues for renewable energy as key to low-carbon energy future; the need to radically reduce greenhouse gas emissions and diversify energy sources; and a dramatic change in renewable energy use in electricity, heat and transport. Sets "ambitious and challenging" targets to provide £100bn of investment opportunities and up to half a million jobs by 2020.

1 [www.lbp.org.uk/londonap.html](http://www.lbp.org.uk/londonap.html)

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7 <http://webarchive.nationalarchives.gov.uk/20130402151656/http://archive.defra.gov.uk/environment/quality/air/airquality/strategy/documents/air-qualitystrategy-vol1.pdf>

8

9 <http://webarchive.nationalarchives.gov.uk/20130402151656/http://archive.defra.gov.uk/environment/waste/strategy/strategy07/index.htm>

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#### 4. Legislative context for Environmental Sustainability

- **Wildlife and Countryside Act 1981<sup>1</sup>** and **Countryside and Rights of Way Act 2000<sup>2</sup>** form the the primary legislation in the UK for the protection of flora, fauna and the countryside. Includes UK's implementation of the species protection of the European Directive on the Conservation of Wild Birds.
- **Planning and Compulsory Purchase Act 2004<sup>3</sup>** and **Planning Act 2008<sup>4</sup>** and associated Regulations: give effect to the previous Government's policy on the reform of the planning system and strengthens its focus on sustainability, transparency, flexibility and speed.
- **Natural Environment and Rural Communities Act 2006<sup>5</sup>** established Natural England as the organisation with responsibility for enhancing biodiversity and landscape and promoting access and recreation. Extended to public bodies duty to ensure due regard to the conservation of biodiversity.
- **Climate Change Act 2008<sup>6</sup>** introduced legally-binding targets for greenhouse gas emission reductions; carbon budgeting and use of international credits for carbon budgets; creation of the Committee on Climate Change; requirements for the Government to report the risks of climate change, publish a programme setting out how these impacts will be addressed and issue guidance on the way companies should report their emissions; powers to support the creation of a community energy savings programme; requirement for reporting on efficiency and sustainability of Government estate; and further measures to reduce emissions.
- **Energy Act 2008<sup>7</sup>** ensures, with the *Planning Act 2008* and *Climate Change Act 2008*, that legislation underpins long-term delivery of the UK's energy and climate change strategy. Put in place legislation to: reflect the availability of new and emerging technologies; correspond with changing requirements for security of supply infrastructure; ensure adequate protection for the environment and the taxpayer as energy markets change.
- **Energy Act 2010<sup>8</sup>** implements key measures to deliver the Department of Energy & Climate Change's low carbon agenda. Includes provisions to introduce a new carbon capture and storage (CCS) incentive; require regular reports on the progress on the decarbonisation of electricity generation and the development and use of CCS; introduce mandatory social price support; tackle fuel poverty; and improve the fairness of energy markets by extending and clarifying Ofgem's powers and objectives.
- **Energy Bill (December 2010)<sup>9</sup>** is designed to provide for a step change in provision of energy efficiency measures to homes and businesses, and make improvements to the framework to enable and secure low carbon energy supplies and fair competition in energy markets. Sets out how the Government's new Green Deal scheme, due to launch in 2012, will help businesses and consumers improve energy efficiency.

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1 [www.jncc.gov.uk/page-1377](http://www.jncc.gov.uk/page-1377)

2 [www.opsi.gov.uk/acts/acts2000/ukpga\\_20000037\\_en\\_1](http://www.opsi.gov.uk/acts/acts2000/ukpga_20000037_en_1)

3 [www.legislation.gov.uk/ukpga/2004/5/contents](http://www.legislation.gov.uk/ukpga/2004/5/contents)

4 [www.planningportal.gov.uk/planning/planningpolicyandlegislation/reform/planningact2008/](http://www.planningportal.gov.uk/planning/planningpolicyandlegislation/reform/planningact2008/)

5 <http://webarchive.nationalarchives.gov.uk/20130402151656/http://archive.defra.gov.uk/rural/policy/ruraldelivery/nerc.htm>

6 [www.opsi.gov.uk/acts/acts2008/ukpga\\_20080027\\_en\\_1](http://www.opsi.gov.uk/acts/acts2008/ukpga_20080027_en_1)

7 [www.decc.gov.uk/en/content/cms/legislation/energy\\_act\\_08/energy\\_act\\_08.aspx](http://www.decc.gov.uk/en/content/cms/legislation/energy_act_08/energy_act_08.aspx)

8 [www.decc.gov.uk/en/content/cms/legislation/energy\\_act\\_10/energy\\_act\\_10.aspx](http://www.decc.gov.uk/en/content/cms/legislation/energy_act_10/energy_act_10.aspx)

- Also in December 2010, the Department of Energy & Climate Change and HM Treasury launched **proposed reforms to the UK electricity market** to ensure the meeting of climate targets and a secure, affordable future energy supply. Proposals include encouraging investment in low-carbon electricity by providing a clear long-term price for carbon<sup>1</sup>; and the Government's preferred electricity market framework<sup>2</sup>.

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1 [www.hm-treasury.gov.uk/consult\\_carbon\\_price\\_support.htm](http://www.hm-treasury.gov.uk/consult_carbon_price_support.htm)

2 [decc.gov.uk/en/content/cms/consultations/emr/emr.aspx](http://decc.gov.uk/en/content/cms/consultations/emr/emr.aspx)





