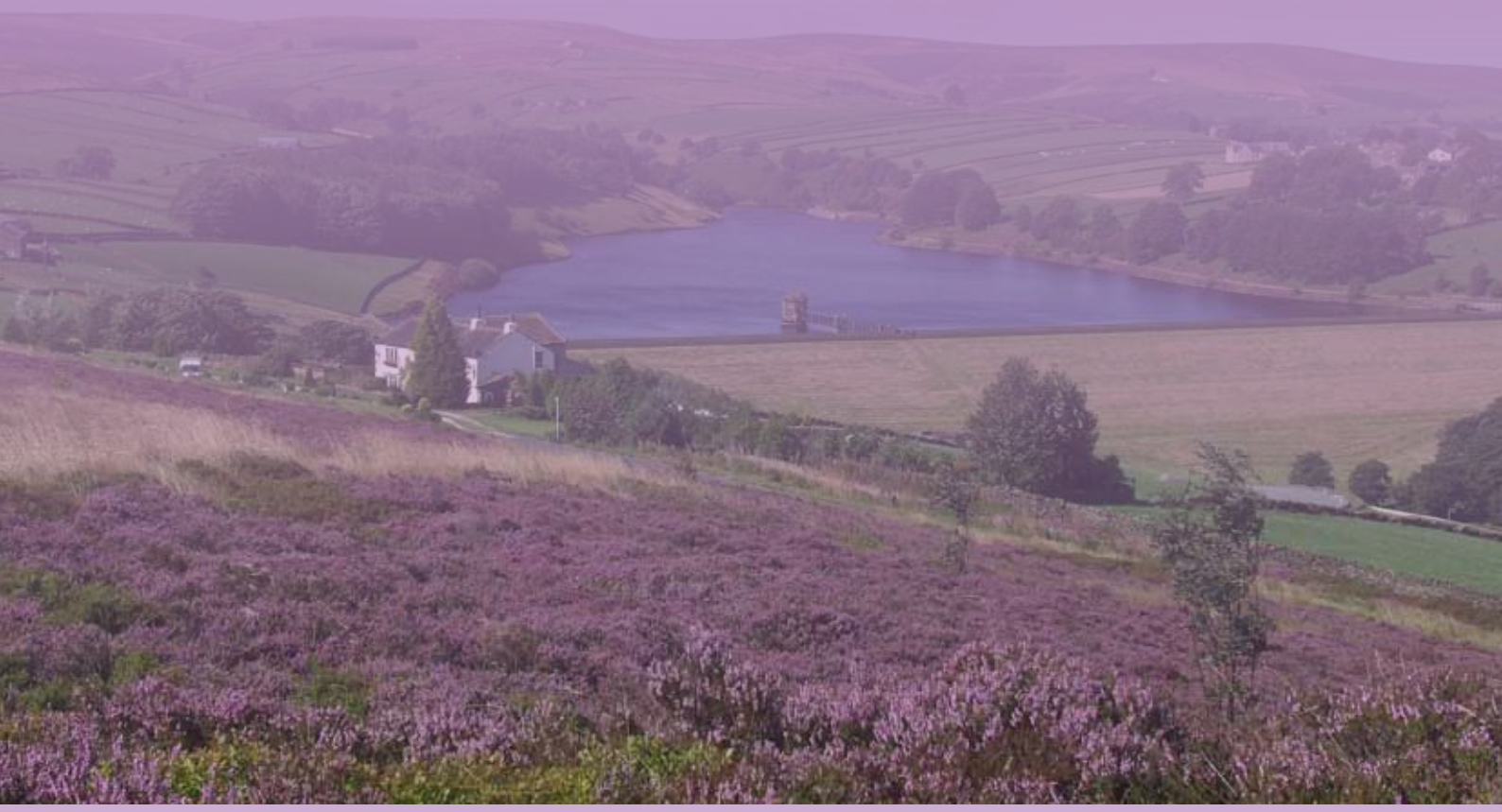
Planning for Places

5.4 **Environment**

This section includes policies which seek to protect and enhance environmental assets and use of resources, including:

- **Open space, sports and recreational facilities**
- **Biodiversity**
- **Landscape**
- **Historic environment**
- **Flood risk**
- **Energy**



Introduction

5.4.1 **The environment theme focuses on the protection and enhancement of environmental assets and on the use of resources. Environmental assets include Bradford's impressive range of heritage assets, areas of different landscape character and distinctive habitats of wetland, woodland and upland. Policies relating to minerals and energy seek to address use of the District's natural resources and policies relating to environmental protection set parameters to manage impacts on air, land and water.**

Open Space, Sports and Recreational Facilities

Introduction

5.4.2 **A wide variety of different types of open space, ranging from parks and gardens, natural and semi-natural greenspaces, green corridors, amenity greenspace, outdoor sports facilities, provision for children and civic spaces, exist within the District and are valued by local communities. Retention of the vast majority of existing open space and sports and recreation facilities, making improvements to the quality and nature of the resource and meeting the existing and future needs of a growing and diverse population are challenges to be addressed in order to provide a good quality of life for the District's residents. In response to this challenge, the policy relating to open space and sport and recreation facilities identifies a framework for protecting the existing resource and increasing provision to meet the needs of the District's population.**

5.4.3 Wider research and the Health Impact Assessment has emphasised the importance of making provision for children's play and the participation of young people in sport due to the link between physical activity and health and well-being. This link is recognised in a number of council strategies; eg the Strategy for Play and the Strategy for Sport and Physical Activity in the Bradford District. Both promote informal physical activity and the later has the ambition for the district to be 'Active, Healthy and Successful'. Quality, capacity and accessibility of open space and recreational facilities are therefore of key importance. Open space and recreational facilities that are readily accessible from recreational routes, the rights of way network and cycleways will be of significant benefit.

5.4.4 Natural England's Accessible Natural Greenspace standards (ANGst) are also health related and based on the premise that everyone should have access to natural greenspace near to where they live. Evidence used to compile these standards shows that access to natural greenspace for fresh air, exercise and quiet contemplation has benefits for both physical and mental health. Research provides good evidence of reductions in levels of heart disease, obesity and depression where people live close to greenspace. Bradford has a network of greenspaces which fulfil a valuable role, particularly within the densely developed urban core of the district. This green framework, that brings the character of the countryside into the city, can assist regeneration and attract both visitors and investors.

5.4.5 The three underlying principles of ANGst are improving access to greenspaces, improving naturalness of greenspaces and improving connectivity with greenspaces. In relation to Natural Englands definition of what constitutes 'natural', it is considered that users will find nature in wildlife, open landscapes, seasonal changes and places of tranquillity. Natural greenspaces may overlap with valued landscapes and local wildlife areas, they will link into the rights of way and cycle networks and key recreational routes.

5.4.6 The Habitat Regulations Assessment of the proposals in the Core Strategy identifies and assesses potential impacts on the South Pennine Moors Special Protection Area (SPA) and Special Area of Conservation (SAC). It identified recreational impacts, including walkers, dogs, trampling and erosion as one of a range of impacts likely to occur due to increases in the District's population and the number of visits to the moors.

5.4.7 While the strategy to address recreational and other potential impacts is still in the process of being developed, measures are likely to include, management of access to the moors, combined with the identification of alternative natural greenspaces', to provide mitigation for the potential impacts of residential development on the protected species and habitats of the uplands within the SPA and SAC. This greenspace needs to be of a quality to divert visitors from the protected moorland and will need to form an element in the approach to open space.

5.4.8 Work on identifying existing open spaces and the application of ANGst standards have been used in planning for Green Infrastructure (GI) at a regional level. Strategic Core Policy 6 relating to Green Infrastructure identifies criteria for the identification of GI within the district and strategic GI assets. Planning for GI differs from assessments of open space in that it goes beyond the site specific and seeks to identify and protect multi-functional networks of connected spaces. GI promotes a framework which evaluates open land in terms of the range of functions it performs, whereas an assessment of open space and recreational facilities might identify a need for a particular type of facility linked to a likely user group within the existing or future population of the District.

5.4.9 National Planning Policy Framework (NPPF) supports the principle of retaining existing open space and sports and recreational buildings and land. It supports the principle of access to high quality open spaces and opportunities for sport and recreation as making an important contribution to the health and well-being of communities. The NPPF definition of open space stresses the importance of 'areas of water (such as rivers, canals, lakes and reservoirs)' in offering opportunities for sport and recreation and acting as a visual amenity.

5.4.10 Blue/green infrastructure, which encompasses the Leeds-Liverpool Canal, moorland reservoirs, the network of river and beck corridors (identified as a strategic asset in Policy SC6 relating to Green Infrastructure) and the recently created mirror pool in the City Centre, will become an increasingly important element in the District's future. Preparatory work promoting the aspiration of opening up the Bradford Beck Corridor and the introduction of Sustainable Urban Drainage highlight the importance of blue/ green infrastructure in bringing benefits for both people and wildlife, while also addressing flood risk and increasing the District's resilience to climate change.

5.4.11 The NPPF supports the principle of access to high quality open spaces and opportunities for sport and recreation and the protection of existing open space and facilities. In relation to the value of open land, the NPPF highlights the importance of community support, multiple functions of open land (wildlife, recreation, water management and food

production) and the complimentary themes of strategic networks for biodiversity and protecting and enhancing valued landscapes.

5.4.12 The NPPF (paragraph 77) introduces the concept of a Local Green Space Designation, so that communities can identify for special protection through local and neighbourhood plans, green areas of particular importance to them. The criteria identified for Local Green Spaces are that they should be in reasonable close proximity to the community they serve, local in character and have a particular significance, due to beauty, historic significance, recreational value, tranquillity or richness of wildlife.

5.4.13 In Bradford there are recognised areas of greenspace, whether associated with villages, towns or neighbourhoods, which make a significant contribution towards local amenity or offer opportunities for recreation and make a significant contribution towards character and distinctiveness, the setting of a settlement and visual quality. They may have a prominent visual feature, represent a link with history, offer contact with wildlife or display the benefits of mature trees or other attributes which show seasonal change.

5.4.14 The Bradford Open Space, Sport and Recreation Study was produced by Knight Kavanagh and Page on behalf of Bradford Council. The assessment sets out the results of research and analysis of open space, sport and recreational facilities provision within Bradford and addresses the quantity, quality and accessibility of provision. The assessment identifies whether provision is adequate or whether there are gaps in provision and deficiencies in the quality of existing areas of open space.

5.4.15 The Open Space Sport and Recreation Study identified standards for provision of a range of different types of open space. However, it did not identify standards for certain types of less formal provision e.g. green corridors. It also identified deficiencies at a local scale. The study provides the context for striking a balance between seeking contributions from developers for new provision of either on-site or off-site open space and the enhancement of existing facilities. The standards identified in the previous assessment of open space and recreation facilities are in Appendix 9, as are Natural England's Accessible Natural Greenspace Standards.

5.4.16 With support from Sport England, the Council engaged consultants to assess the sports and leisure infrastructure in the District. The Sport and Recreation Facilities Assessment focused on provision of swimming pools, sports halls and fitness facilities and assessed whether the supply of built facilities was meeting demand. The Sport and Recreation Built Facilities Assessment and Strategy is currently under review.

5.4.17 Data has been collected from surveys about visits to areas of the South Pennine Moors that lie within Bradford District. The visitor data relates to key factors such as frequency of visit, timing, access point, range of activities, mode of transport and distance travelled. Once this has been fully analysed, it will help to assess how potential impacts from an increasing number of visitors can be managed and the extent to which alternative areas of natural greenspace can divert pressure to less sensitive areas. An SPD will be produced to identify contributions and secure mitigation measures, in relation to provision of natural greenspace, where this is required to mitigate the effects of in creased recreation pressure upon the South Pennine Moors SPA/SAC.

Policy EN1: Protection and improvements in provision of Open Space and Recreation Facilities

Open Space

A. Land identified as recreation open space, or which is currently or was formerly used for recreation open space will be protected from development. Recreation open space includes the following range of typologies; parks and gardens, natural and semi-natural greenspaces, green corridors, amenity and local greenspace, outdoor sports facilities, provision for children, allotments, civic spaces and also areas of water which offer opportunities for sport and recreation.

Exceptions will only be made where:

1. **The proposal includes alternative equivalent or better provision in terms of quantity, quality, accessibility and management arrangements, and**
2. **The loss of open space does not lead to a deficiency in the area, taking into account the most recent assessments of existing provision and future proposals for growth, and**
3. **The site is not suitable to meet any identified deficiency in other types of open space**

Provision of Open Space and Recreation Facilities

B. Housing developments will be required to provide for new or improved open space, sport and recreational facilities through:

1. **The provision of new open space, preferably on-site,**
2. **A contribution to the provision of new open space off-site; or**
3. **The enhancement of existing open space nearby**

When identifying land for development involves the release of greenfield or green belt land, identified deficiencies in recreation open space within the local area will need to be addressed, in addition to meeting the needs of future residents.

Green Infrastructure, recreation facilities and open space, including playing pitches and natural greenspace, to meet existing and future needs will be identified in the proposals maps of Local Plan documents.

Mitigating Recreational Pressure on the South Pennine Moors SPA and SAC

C. Residential developments which contribute to recreational pressure upon the South Pennine Moors SPA and SAC will be required to mitigate these effects through provision of new recreational natural greenspaces or improvements to existing open spaces.

Local Greenspace

D. The Council will work with local communities to identify areas of Local Green Space in the local plan and neighbourhood plans. Local greenspace which is

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valued for amenity, recreation and wildlife or contributes towards character, distinctiveness and visual quality will be protected from development, other than in very special circumstances which are supported by the local community.
Built Recreation Facilities

E. Where major development is proposed in an area with a clearly identified deficiency, in either the quality or quantity, of built recreation facilities, contributions may be required to secure provision of new or enhanced facilities.

Standards of Provision and Maintenance

F. Standards of provision relating to quantity, quality and accessibility, for open space and recreation facilities and requirements for future maintenance will be developed as part of the evidence base and identified in the Local Plan.

OUTCOMES	INDICATORS	TARGETS
Standards of provision have been identified for a number of open space typologies and for certain recreation facilities. An up to date assessment has been made of provision for a range of open space typologies and for a range of recreational facilities, in relation to the existing and future needs of the District's population. Key GI networks and assets within the District have been identified	The range of types of open space and recreational facilities for which an up to date assessment has been made. IND8(EV) The number of types of open space and recreational facilities for which standards have been identified in a DPD. IND9(EV) Participation in sport and recreation Operational	An assessment has been made of the extent to which provision of open space and recreational facilities meets the needs of existing and future needs of the District's population. IND8(EV) Key deficiencies in quantity, quality and accessibility of the districts resource have been highlighted and actions identified to address these in DPDs, Action Plans and the Local Infrastructure Plan. IND9(EV)

LEAD ROLES	MAIN MECHANISMS
Bradford Council **Leeds City Region** **Natural England** **Sport England**	Local Plan, Development Management, Open Space Assessment, Assessment of Sport and Recreational Facilities, Assessment of Sport Facilities Green Infrastructure Strategy Yorkshire Plan for Sport Investment plans and decisions Sport England Toolkit

5.4.18 There is a need to consider the basis of future provision for a range of typologies and where it might be appropriate to identify standards. More detailed criteria on the role of provision standards and funding mechanisms for future maintenance will be identified in the Shipley and Canal Road Corridor DPD, the Allocations DPD, the Local Infrastructure Plan and/or subsequent guidance, if needed. The Council will also need to consider the range of typologies and different sports facilities that can be directly provided and supported through the plan period and the role of the Council in encouraging provision and maintenance by other means, whether this be private companies, sports clubs or a wider community of users.

5.4.19 Work on updating the position in relation to individual open space typologies is currently ongoing. The Allotments Strategy emphasises the importance of allotments in relation to health, as they encourage people to take responsibility for the sustainable production of food and also contribute towards achieving greater community resilience.

5.4.20 Work is ongoing in relation to the production of an up to date playing pitch strategy. In relation to more formal types of sport and recreation facilities, the demand from particular user groups participating in the sport will be a key factor. The work has started to identify major challenges in relation to having the pitch capacity to meet demands from local clubs and in relation to the limited security of tenure that clubs face. Once needs have been prioritised, and identified in the strategy, outputs will feed into local infrastructure planning. When work on other types of open space eg parks has been updated, this will also feed into infrastructure planning work.

5.4.21 Natural England's ANGst standards are a tool to assess current levels of accessible natural greenspace and plan for better provision. Local authorities are encouraged to adopt ANGst as their local standards. The Woodland Trust has also identified Woodland Access Standards. Community participation in identifying Local Greenspace will also be an important element.

5.4.22 The provision of natural greenspace of sufficient quality and in appropriate locations to divert visitors from the protected upland areas will form an element in the range of typologies to be addressed. This will require evaluation of the existing accessible, natural greenspace resource within the District and further analysis of visitor survey data to enable us to achieve a definition of accessible natural greenspace that is appropriate for Bradford.

5.4.23 The importance of the link between health and recreation raises the issue of widening participation and encouraging more intensive and extended use of existing facilities, as well as identifying where additional facilities are needed. A balanced approach will need to be taken between encouraging participation and extended use of existing facilities for sport and recreation and the creation of new facilities, between a need for formal facilities that can be used in all weathers and larger less formal areas of open space. The need to provide indoor facilities or large areas of open space of use to many people from a wider area will need to be addressed as will the provision of smaller scale local facilities. The future framework for reviewing and identifying additional areas of open space will need to be based on an assessment of standards and needs, as well as the multiple functions such spaces can offer.

5.4.24 In the context of Green Infrastructure, contributing factors in the assessment of amenity and greenspace will be standards and definitions of accessible natural greenspace

and the multiple functions that spaces can offer in relation to connectivity and scope for improving networks of recreational routes, amenity and contribution to local character, existing biodiversity value and potential for enhancement and resilience to climate change.

5.4.25 The Open Space, Sport and Recreation Study assessed the adequacy of the provision for a range of open space and recreation facilities at the time of the study. The updated population projections identified in the core strategy mean that a review of provision will be necessary, linked to locations identified to accommodate growth. This will need to feed into work on local infrastructure and green infrastructure planning.

5.4.26 Until a review of the full range of typologies is carried out, any area based assessment of open space provision needs to take account of the last assessment plus the future population projections for the area identified in this document. Where expansion of settlements is proposed, a planned and co-ordinated programme of improvements in the quantity and quality of open space and recreation facilities will be required to accommodate needs that have quite specific requirements, such as that for new playing pitches, where only relatively flat land is appropriate.

5.4.27 Consultation with local communities will take place in relation to local greenspace, through the preparation of Local Plan Documents and Neighbourhood Plans. In Bradford, such spaces may be a prominent visual feature, represent a link with history, offer contact with wildlife, the benefits of mature trees or attributes which show seasonal change. In the more densely-developed urban neighbourhoods of the District, amenity value might mean the opportunity for social interaction in the open air with relatively low levels of disruption from noise. Local green spaces might be integral to the town or village or of significance in relation to setting or historic development of the local area.

Biodiversity and Geological Conservation

Introduction

5.4.28 **Biodiversity is the widespread term for biological diversity, which represents the richness and variety of plants, birds, animals and insects. In recent years, concerns about biodiversity have increased. It is recognised that without this variability in the living world, ecological systems and functions could break down, with detrimental consequences for all forms of life**

5.4.29 The wildlife of the Bradford District is influenced by its climate, topography and latitude, with many species at the limit of their range. On a national scale the climate of the Bradford District lies on the transition zone between the warmer drier lowlands of Britain and the cool wet, uplands.

5.4.30 The range of habitats within the District is also influenced by the underlying geology. The Millstone Grits of the Southern Pennines to the west of the District give rise to substantial areas of upland heathland and blanket bog, whilst the softer shales of the Coal Measures have produced more woodlands, valley wetlands and unimproved grasslands. The demand for development on the lower-lying Coal Measures has fragmented these

habitats, although unique habitats have also been created throughout the District as by-products of industrialisation, such as reservoirs, canals and quarries.

5.4.31 The earlier exploitation of sandstones, shales and coal seams has created a landscape that is characteristic of the area. Geology and/or geomorphology therefore, also needs to be considered as part of the planning process, not only to prevent damage to important sites but also to promote enhancement of geodiversity.

5.4.32 Policy EN2 seeks to protect biodiversity and geodiversity within the District and to identify principles for enhancing the overall biodiversity resource and stemming losses. It identifies a range of factors that need to be taken into account in identifying potential land for development, in taking into account impacts on the District's biodiversity resource in decision-making and in making an assessment and managing proposals that come forward. One of the most important principles in relation to conserving and enhancing biodiversity identified in the NPPF is that where 'significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.' It will therefore only be acceptable to consider compensation as a last resort and under circumstances where this can be carried out in accordance with best practice and guidance, such as that produced by the Chartered Institute of Ecology and Environmental Management.

5.4.33 Conserving and enhancing biodiversity and geodiversity is an integral part of seeking to achieve sustainable development. There are currently four levels of designated sites within Bradford District ranging from sites of international importance to those of local nature conservation value.

DESIGNATIONS IN BRADFORD DISTRICT		NOTES
INTERNATIONAL	Special Protection Areas (SPA)	South Pennine Moors SPA/SAC
	Special Areas Conservation (SAC)	
NATIONAL	Sites of Special Scientific Interest (SSSI) – 4 no (1 no is same as SPA/SAC)	South Pennine Moors; Bingley South Bog; Trench Meadows; Yeadon Brickworks (geological)
	Local Nature Reserves (LNR) 2no/3no	Railway Terrace; Sun Lane; (Ben Rhydding Gravel Pits)
REGIONAL	Sites of Ecological/Geological Importance (SEGI) – 22 no	All regional and local sites to be combined in one system known in future as **Local Wildlife Sites** and **Local Geological Sites** – BWAs currently being re-assessed against new criteria
	Regionally Important Geological Sites (RIGS) – 16 no	
LOCAL	Bradford Wildlife Areas – 152 no	

International Sites

5.4.34 The South Pennine Moors represent a significant proportion of heathland in England and show exceptional diversity compared to other examples in the European Union. As a Special Protection Area (SPA) and Special Area of Conservation (SAC), the South Pennine Moors are protected under the European Habitats Directive and the European Birds Directive because they contain habitat types which are rare or threatened, and due to the importance of the breeding bird populations.

5.4.35 Under Regulation 102 of the Conservation and Habitats and Species Regulations 2010 (commonly referred to as 'the Habitats Regulations'), the UK's transposition of European Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ('the Habitats Directive'), the Council was required to undertake a Habitat Regulations Assessment of the policies and proposals in the Core Strategy. This was necessary to ensure that the policies and proposals would not lead to adverse effects on the ecological integrity of internationally important habitats or species within or close to the District. A range of impact pathways likely to significantly affect the South Pennine Moors were identified, including the potential loss of supporting feeding sites to development and potential impacts from wind turbines and recreational disturbance affecting breeding birds for which these sites are designated.

5.4.36 The review of literature presented in the Habitat Regulations Assessment Report suggested that many Special Protection Area/ typical species travel as far as 2.5km from the SPA boundary to forage (and in some cases further). Additional bird and habitat surveys have been carried out, as a first stage of ensuring that regularly used areas can be protected from development and its associated impacts, where proposals in the Core Strategy have identified a need to develop land within this 'zone of influence'. Strategic Core Policy SC8 and elements in Policy EN2 will contribute towards achieving this.

National and Local Priorities

5.4.37 Despite previous international targets to halt biodiversity loss by 2010, many species and habitats have continued to decline. The most recent England biodiversity strategy, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' was published by DEFRA in 2011 and sets out the ambition to halt the overall loss of England's biodiversity by 2020, recognising that healthy, well functioning ecosystems and coherent ecological networks are the foundation of sustained economic growth, prospering communities and personal well-being.

5.4.38 Reversing biodiversity decline presents a huge challenge to the District. Planning decisions will need to have a minimal impact on biodiversity and enhance the resource wherever possible. The aim is to secure biodiversity gains through development wherever this occurs and to use available sources of data relating to biodiversity and geodiversity to inform the identification of potential sites for development.

5.4.39 In the **UK Biodiversity Action Plan** priority species and habitats were identified as those being the most threatened and requiring conservation action. The species and habitats have been reviewed (2007) to ensure that the UK BAP lists of priority species remain up-date and focused on the correct priorities. Selection of priority species and habitats for the priority lists followed consideration by expert working groups against a set of selection criteria, based on international importance, rapid decline, high risk and habitats of importance for key species. Species of international, national and local importance include species covered by the legislation and policies listed in Appendix 11.

5.4.40 **Local Biodiversity Action Plans** identify local priorities and contain objectives and targets for maintaining, restoring and creating habitats and conserving species. Important objectives in the Draft Bradford Local Biodiversity Action Plan (BAP) are safeguarding locally and nationally valued species and habitats and raising public awareness. Important habitats are defined as UK BAP habitats that occur in Bradford and the 4 local BAP habitats of in-bye grassland, hedgerows, river corridors and upland woodland. Bradford's BAP identifies habitat action plans for in-bye grassland, hedgerows, river corridors and upland woodland. The list of Bradford BAP habitats is in Appendix 11.

5.4.41 The habitat action plan for hedgerows, and the Landscape Character Assessment for the Bradford District both recognise the important role that boundary structures play in the ecology and landscape of the District. Hedgerows and drystone walls can be threatened both directly by development decisions and indirectly when land use change leads to a more gradual process of neglect.

5.4.42 The Council has a duty under Section 40 of the Natural Environment and Rural Communities Act 2006 to conserve and enhance priority habitats and to have regard to the purpose of conserving biodiversity when exercising its functions. The overall approach, based on previous consultation, seeks to identify priorities for habitat restoration and creation and to protect and enhance locally significant habitats and those of particular importance to species identified in the local BAP. In relation to protection, sites of national and international importance are protected in the NPPF and in other legislation and guidance, therefore, apart from a reference to the requirements of the Habitat Regulations, the focus is on sites and issues of regional and local significance.

Ecological Connectivity

5.4.43 Work undertaken at a regional level in relation to ecological connectivity and climate change resilience has indicated that the traditional approach of protecting identified sites is not sufficient to ensure that our biodiversity remains viable into the future. Work has taken place to identify the potential for increasing habitat linkages across the regions landscapes and within the District in relation to grassland, woodland, wetland and heathland networks. In future the effects of drought could result in greater fragmentation of habitats. To adapt to climate change the Yorkshire and Humber Climate Change Adaptation Study recommends improving connectivity and an overall expansion in habitat types currently suffering from isolation or fragmentation, to improve habitat permeability.

5.4.44 Improving links, i.e. creating new habitats, between existing sites of high quality habitats, or improving the supporting habitat in the surrounding landscape can greatly increase the chances of survival for particularly vulnerable species via these stepping stone sites and enhanced wildlife corridors. Establishing habitat networks can achieve significant benefits for areas within the urban fringe where landscapes have been greatly influenced and/or degraded by human activity, leaving the remaining habitats fragmented and isolated from each other.

Wetlands

5.4.45 Bradford has over 50km of main rivers and 23km of canal running through the District. Both the River Wharfe, which supports a variety of fish, including a salmon, brown trout and grayling and the Leeds Liverpool Canal are designated as SEGIs for their nature conservation value. The other main river that flows through the District, the River Aire has been affected by years of pollution, although water quality has recently improved significantly through a variety of infrastructure initiatives.

5.4.46 The network of river and beck corridors are important for species like migratory fish, otters and white-clawed crayfish which depend on continuity of habitat. The upland peatlands, valleys and associated dykes are important water and wetland habitats, as are smaller features such as ponds, lakes, millponds and reservoirs that form part of a wider ecological network with other habitat types.

5.4.47 Connected areas of wetlands along river and beck valleys will benefit both people and wildlife, and one of the key regional aims is to facilitate the revival of salmon in the main rivers through the introduction of fish passes and removal of high weirs which are currently preventing the passage of this iconic species back into the District. Regional work with the Environment Agency and other strategic partnerships have achieved many successes, with salmon now reaching the Aire east of Leeds; however more progress will be sought, particularly through development opportunities alongside the main rivers, to encourage salmon to return to the Aire and Wharfe. This has not only biodiversity benefits, but also positive recreational impacts, with potential for increased visitor numbers, as well as health and well-being benefits. Proposals that might have an impact on fish, such as hydro-electric power or other energy generation needs to ensure that fish protection and passage is incorporated into the proposal.

Woodlands

5.4.48 Woodlands are an important strategic habitat as they provide multiple benefits and are a key component of Green Infrastructure. Less than 5% of Bradford is woodland compared to a national average of 10%. The Forest of Bradford has significantly increased woodland/tree cover throughout the district in partnership with local communities, 220 hectares new woodland (500,000 trees) and 12km new hedgerows since 1997 and continues to make good progress. Protecting and enhancing the District's woodlands in the context of climate change, potential threats from disease and the need to accommodate population growth will be a significant challenge.

5.4.49 Ancient semi-natural woodlands (dating back to 1600 or before) have immense biodiversity value but cannot be replaced once destroyed. The District has over 550 Ha of ancient woodlands, 285 Ha of which is classed as *ancient semi-natural* (i.e. not replanted) and these will be strongly protected against development; aged or veteran trees also have irreplaceable biodiversity value. Other specific woodland types to be protected, enhanced and re-created are Upland Oak Woodland and Wet Woodland, but equally all woodland is important and any proposals should result in no net loss of woodland. The protection of ancient semi-natural woodland and aged/ veteran trees is addressed in Policy EN5 relating to trees and woodland.

Grasslands

5.4.50 Species rich lowland meadows, known as National Vegetation Community (NVC) type MG5, have suffered significant declines over the last century due to destruction and changes in management (in 1984 losses were estimated at 97% over previous 50 years source: JNCC). The Bradford District has few remaining examples; Trench Meadows SSSI is designated, in part, for this type of grassland. Other important grassland types in the District are Upland Hay Meadows and Acid Grasslands (such as In-Bye Pasture). The protection, enhancement and re-creation of these three grasslands types are priorities for the district; species-rich grasslands such as meadows are hugely important for pollinators and other invertebrates.

Uplands

5.4.51 The Bradford District is fortunate to contain a significantly large area (4295 Ha) of internationally important upland consisting of a mosaic of blanket bogs, upland heathland and acid grassland. Not only are these rich in biodiversity and a key component of the landscape character of the Bradford District, they also have recreational, cultural and health benefits, as well as providing ecosystem services such as carbon sequestration and flood mitigation. However, these uplands and the faunal populations they support, in particular birds, are also fragile and need protection from air pollution, wind generation, recreational disturbance, trampling, predation and changes in hydrology.

5.4.52 Habitats of the moorland fringe beyond the designated area are also important in supporting bird species that are under threat. When traditionally managed, 'in-bye grasslands' support a range of invertebrates which provide food for a range of waders and moorland birds. Also important are the blocks of old sessile oak woods, usually found in steeply sloping cloughs around the fringes of the upland heath and bog of the South Pennines.

5.4.53 As the District's key natural environmental asset, both ecologically and recreationally, their long term protection, management and sustainability is of great importance. A key objective would be to secure mechanisms and resources for long-term management, improving resilience to climate change and restoring connectivity between habitats.

5.4.54 The protection and enhancement of the Districts biodiversity and geodiversity resources (designated sites and habitats/species outside designated sites) contributes towards a broad range of quality of life objectives and policies, including providing opportunities for quiet and informal recreation, maintaining landscape character and distinctiveness and making the area attractive for residents and drawing in sustainable sources of investment. These habitats contribute to a wider range of benefits known as Ecosystem Services, such as flood storage and mitigation, carbon sequestration, temperature/pollution moderation, pollination, amenity and health benefits.

5.4.55 However, while priority habitats are important, the biodiversity associated with urban green spaces needs to be valued as this sustains more widespread and common species and represents the main contact with nature for many residents. Recognising this has influenced the enhancement element in the policy. Opportunities need to be sought to improve access and interpretation for areas of local value.

5.4.56 The issue of connectivity and enhancement of the overall resource is addressed in the references to Green Infrastructure Corridors in Strategic Core Policy 6 and in the reference to ecological network design. The mapping of woodland, grassland, wetland and heathland habitats and potential for connectivity and green infrastructure planning should be seen as complimentary and in many locations networks will overlap.

5.4.57 There are also strong links with the landscape policy and with the issue of the creation and enhancement of areas of accessible natural greenspace and the need for long term maintenance. The issue of resilience to climate change is addressed in Strategic Core Policy 2 and emphasising the importance of creating river corridor and wetland habitats can support objectives relating to flood risk and water management.

5.4.58 The planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where

possible, contributing to the government's commitment to halt overall decline in biodiversity and identifying coherent ecological networks that are more resilient to current and future pressures. It is recommended that planning authorities set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites. The NPPF makes it clear that plans should seek to allocate land with the least environmental or amenity value. The requirements of this policy will contribute towards identifying such areas.

5.4.59 Work has taken place on producing biodiversity opportunity maps and indicative ecological networks at a regional level. This work has formed the basis for work carried out at a district level by West Yorkshire Ecology to identify grassland, woodland, wetland and heathland networks. The maps can be used as a focus for the efforts of local authorities, wildlife agencies and other partners to maintain, restore and re-create the biodiversity resource and form the basis for producing local maps.

5.4.60 Habitat networks that aid species movement need to be integrated into master planning of development at an early stage to avoid corridors being blocked by forms of development that would create a barrier to such movement. Connectivity in relation to river, beck and canal networks is of particular importance. Focusing on connectivity will not only benefit existing habitats or species, but will result in the expansion or creation of habitats with the potential to restore ecosystems. More specific data is also held about protected sites and West Yorkshire Ecology has data about protected species.

Policy EN2: Biodiversity and Geodiversity

The North and South Pennine Moors SPAs and SACs

A. Any development that would be likely to have a significant effect on a European Site either alone or in combination with other plans or projects will be subject to assessment under the Habitat Regulations at project application stage. If it cannot be ascertained that there will be no adverse effects on site integrity then the project will have to be refused unless the derogation tests of Article 6(4) Habitats Directive can be met.

Sites of Special Scientific Interest

B. Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest.

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Locally Designated Sites

C. Development likely to have direct or indirect adverse effect on a site of ecological/ geological importance (SEGIs and RIGS) or a site of local nature conservation value (Bradford Wildlife Areas) will not be permitted unless it can be clearly demonstrated that there are reasons for the proposal which outweigh the need to safeguard the substantive nature conservation value of the site. Proposals that are likely to have an impact on such sites will be assessed according to the following criteria;

1. **Whether works are necessary for management of the site in the interests of conservation.**
2. **Whether appropriate mitigation measures, which could include adequate buffer strips, have been incorporated into the proposals to protect species and habitats for which the Locally Designated Site has been designated.**
3. **The development would be expected to result in no overall loss of habitat, through avoidance, adequate mitigation or, as a last resort, the provision of compensatory habitats adjacent to or within the vicinity of any losses proposed. Existing habitats and proposed mitigation or compensatory measures should be quantified.**

Habitats and Species outside Designated Sites

D. Proposals that may have an adverse impact on important habitats and species outside designated sites need to be assessed according to the following criteria:-

1. **The potential for adverse impact on important/priority habitats that occur outside designated sites**
2. **The potential for adverse impact on species of international, national and local importance**
3. **The extent to which appropriate measures to mitigate any potentially harmful impacts can be identified and carried out**
4. **As a last resort, the extent to which appropriate measures to compensate any potentially harmful impacts can be identified and carried out.**

The assessment needs to take account of:

West Yorkshire Local Site Selection Criteria and

Where relevant developers will be expected to submit (European) Protected Species surveys and other ecological assessment related information with their application.

Enhancement

E. Plans, policies and proposals should contribute positively towards the overall enhancement of the District's biodiversity resource.

They should seek to protect and enhance species of local, national and international importance and to reverse the decline in these species.

The Council will seek to promote the creation, expansion and improved management of important habitats within the district and more ecologically connected patchworks of grasslands, woodlands and wetlands. Opportunities for specific habitat creation within development proposals will be sought, including provision for future management.

The Council will seek to establish coherent ecological networks that are resilient to current and future pressures. Development which would cause serious fragmentation of habitats, wildlife corridors or have a significantly adverse impact on biodiversity networks or connectivity will be resisted.

Habitats of the moorland will be enhanced and landowners or occupiers will be actively encouraged to manage important areas for bird foraging to ensure continued provision of suitable habitat.

Where supported by evidence the Council will recognise foraging/ commuting areas for protected and SPA/SSSI qualifying features outside the statutory designated area as a material consideration in the preparation of development plans and in the determination of planning applications. Where supported by evidence, foraging sites, currently outside the SPA/SAC and SSSI will be considered for designation as a Locally Designated Site.

OUTCOMES	INDICATORS	TARGETS
Net increase in important habits and species. Overall enhancement and improved ecological connectivity.	Number of sites identified of local nature conservation importance, and proportion of local sites where positive conservation has been or is being implemented. CORPORATE IND10(EV) Areas of net priority habitats enhancements achieved resulting from development proposals. Operational Progress made towards National Character Area targets in relation to habitats created, as identified in Appendix 12. Operational	Net increase in the % of local sites where positive conservation management has been or is being implemented over each monitoring period IND10(EV)

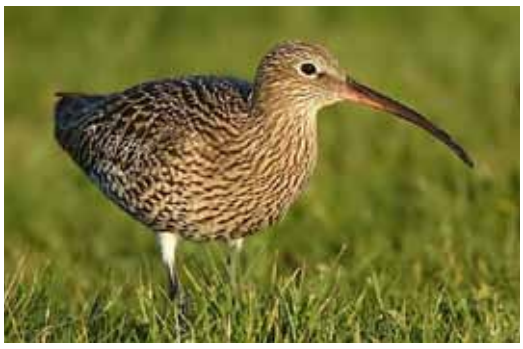
LEAD ROLES	MAIN MECHANISMS
Bradford Council **Natural England** **West Yorkshire Ecology** **West Yorkshire Geology Trust** **Forest of Bradford**	Biodiversity Action Plan Nature Conservation Strategy West Yorkshire Geodiversity Action Plan

5.4.61 The Policy will be implemented through a wide variety of measures, programmes and working with key partner organisations. For example, regional work with the Environment Agency and other strategic partnerships has achieved success, through using development opportunities alongside the Rivers Aire and Wharfe to support work that introduces fish passes and removes high weirs in order to encourage salmon to return.

5.4.62 Joint working with other local authorities, through fora such as Pennine Prospects, West Yorkshire Ecology, West Yorkshire Biodiversity Action Plan Partnership and WYBAP, Strategic Waterways Group and Leeds City Region Green Infrastructure projects will inform requirements and maximise the resources available to achieve enhancement of the biodiversity resource and start to reverse biodiversity decline.Ecological networks and biodiversity enhancement opportunities will be integrated into plan-making as part of the wider Green Infrastructure approach for the District and should be designed into proposals for development at an early stage.

5.4.63 Work will be taken forward on local biodiversity action plans and priority habitats in liaison with local stakeholder groups, benefiting from the knowledge, enthusiasm and resources of the third sector.

5.4.64 The Policy will be implemented through the choice of potential locations for development and the identification of requirements for habitat creation, enhancement and management in association with the development of proposals. More specific requirements will be identified in Local Plan Documents and in Neighbourhood Plans. Funding mechanisms identified, in relation to HRA requirements to achieve management and mitigation measures in relation to potential adverse impacts on bird feeding grounds will provide the major means of achieving protection and enhancement of upland fringe habitats.



Curlew

Historic Environment

Introduction

5.4.65 **The Bradford District has a rich and diverse historic and natural environment which is evident in the survival of heritage assets from traces of the Bronze Age on Rombalds Moor to its industrial heritage of grand mills and associated developments from the late 18th and 19th centuries. It is this unique environment that greatly contributes to the identity, character and distinctiveness of the District as well as the quality of life of residents and the local and regional economy through leisure, culture and tourism attractions.**

5.4.66 The historic environment faces a number of challenges resulting from minor, incremental alterations to significant and damaging changes which can affect the nature and authenticity of the structure or space. In most cases these changes are controlled by the Council through planning consents; however harm to the significance of heritage assets can also occur through neglect, lack of maintenance or small incremental changes which can, over time erode the character of these assets.

5.4.67 Additionally there are further challenges for the historic environment as the District faces significant development pressures over the plan period until 2030 particularly in the urban areas. It is essential that the Core Strategy through Policy EN3 provides a positive strategy for the historic environment since protecting and enhancing the historic environment is one of the Government's core objectives in the promotion of sustainable development.

5.4.68 Policy EN3 contributes towards Core Strategy Objective 12 and links to the following policies SC1, SC6, TR4 and EN4. Further detail is also provided within the sub area policies on local heritage issues and assets.

Salts Mill, a Grade II* listed building in Saltaire World Heritage Site

Policy EN3: Historic Environment

The Council, through planning and development decisions, will work with partners to proactively preserve, protect and enhance the character, appearance, archaeological and historic value and significance of the District's designated and undesignated heritage assets and their settings.

This will be achieved through the following mechanisms:

A. Ensure the protection, management and enhancement of the Outstanding Universal Value (OUV) of the Saltaire World Heritage Site through the implementation of the Saltaire World Heritage Site Management Plan and associated documents.

B. Require development proposals within the boundary of Saltaire World Heritage Site Saltaire or within its Buffer Zone to demonstrate that they will conserve those elements which contribute towards its OUV, including its setting and key views.

C. Require that all proposals for development conserve and where appropriate, enhance the heritage significance and setting of Bradford's heritage assets, especially those elements which contribute to the distinctive character of the District, specifically:

1. **The nationally important prehistoric rock art of Bradford's upland areas.**
2. **The nationally important industrial heritage relating to the textile industry, particularly the mills, chimneys, commercial buildings, public buildings, and associated housing and settlements, the legacy of public parks, gardens, landscapes and cemeteries.**
3. **The pre-industrial townscape and distinctive architectural styles and palette of materials of the District's towns and villages, the Victorian townscape of the expanded towns such as Bradford, Ilkley and Keighley.**
4. **The spatial qualities, building form, plot sizes, open spaces, trees and identified significant views of the urban areas, semi-rural villages and suburban developments, including at Heaton Estates, Devonshire Park and Middleton.**
5. **The heritage assets associated with transport including historic bridges, and the structures and character of the Leeds and Liverpool Canal.**
6. **The literary and other associations of Haworth and conservation areas of Thornton with the Bronte family.**

D. Where possible the original use of a listed building should be retained or continued. Where this is no longer viable or appropriate or where without an alternative use the listed building will be seriously at risk, the Council will grant permission for an alternative use if it can be demonstrated that:

1. **The alternative use is compatible with and will preserve the character of the building and its setting.**

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2. No other reasonable alternative exists which would safeguard the character of the building and its setting.

E. The alteration, extension or substantial demolition of a listed building will only be permitted if it can be demonstrated that the proposal:

1. Would not have any adverse effect upon the special architectural or historic interest of the building or its setting.

2. Is appropriate in terms of design, scale, detailing and materials.

3. Would minimise the loss of historic fabric of the building.

4. Or if there is harm to the special interest of the building, that this is outweighed by the public benefits of the proposal.

F. Require proposals to protect or enhance the heritage significance and setting of locally identified non designated heritage assets, including buildings, archaeological sites and parks, landscapes and gardens of local interest.

G. Require proposals to respect and reinforce the distinctive character of the part of the District within which they are located. Account must be taken of guidance adopted by the Council, particularly Conservation Area Appraisals and Reviews, the Shopfront Design and Security Guides and other guidance documents.

H. Encourage heritage-led regeneration initiatives especially in those areas where the historic environment has been identified as being most at risk or where it can help to facilitate the re-use or adaptation of heritage assets.

OUTCOMES	INDICATORS	TARGETS
The districts historic attributes and values will be recognised and safeguarded as an integral component of development within the district	Quality and condition of historic attributes Number and % of Listed Buildings in the Saltaire World Heritage Site deemed to be 'at risk IND11(EV) The condition of the key views to and from the Saltaire World Heritage Site IND12(EV) % of Grade I and II* Listed Buildings deemed to be 'at Risk' Operational	A net reduction in the number and % of buildings at 'risk' over each monitoring period IND11(EV) The condition of the key views to be maintained or improved over each monitoring period IND12(EV)

OUTCOMES	INDICATORS	TARGETS
	% of Grade II Listed Buildings Grade deemed to be 'at Risk' Operational Number and % of up-to-date Conservation Area Appraisals Operational Number of planning applications granted subject to sustained objection from English Heritage due to impact on historic environment. Operational	

LEAD ROLES	MAIN MECHANISMS
Bradford Council	Local Plan Core Strategy, Area Action Plans for City Centre and Shipley Canal Road Corridor, Development Management decisions, Conservation Area Assessments & Appraisals and Management Plans, Heritage At Risk Re-surveys, Regeneration programmes
English Heritage	Strategies, plans and projects, Heritage at Risk Register
Heritage Lottery Fund	Townscape Heritage Initiative (THI)

5.4.68 The Council will work with partners, including landowners, agents, developers, local organisations and local communities to ensure that the implementation of Policy EN3 delivers the key strategic objective 12 of this plan to 'Safeguard, enhance and promote the diverse historic built and natural heritage of the District which helps reinforce the local distinctiveness of places.

5.4.69 The term 'heritage assets' refers to historical buildings, places and structures which form parts of the wider historic environment of the Bradford District. It includes designated and non-designated heritage assets. These heritage assets are outlined below:

Saltaire World Heritage Site

5.4.70 Of international, national, regional and local importance to the District is Sir Titus Salt's model village of Saltaire in Shipley built between 1851 and 1876, which was inscribed as a World Heritage Site by UNESCO in 2001. The village is a remarkably well preserved and outstanding example of a Victorian model industrial village. The regeneration of the village from the mid-1980s to the present day is an exemplar of regeneration through heritage.

5.4.71 World Heritage Sites are places of Outstanding Universal Value (OUV) to humanity, as set out in the 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (the World Heritage Convention). The OUV of Saltaire World Heritage Site was defined in a retrospective Statement of Outstanding Universal Value adopted by the World Heritage Committee in 2010. Saltaire's OUV is embodied in its authenticity and integrity of its physical attributes including its river valley location, distinctive grid layout, the high quality and uniformity of its architecture and the range of amenities provided by Sir Titus Salt, which still provide for the village's thriving residential, business and student communities and attract visitors from across the globe.

5.4.72 Criterion A and B seek to ensure the long term protection of the World Heritage Site. Any development proposals within or adjacent to the World Heritage Site and its buffer zone must have regard to Policy EN3 and be informed by the revised World Heritage Site Management Plan, the World Heritage Site Environmental Capacity Study and the Saltaire Conservation Area Appraisal.

Designated Heritage Assets

5.4.73 The Bradford District contains a vast array of designated historic assets which when viewed as an entity, form the essential characteristics of local distinctiveness and environmental identity. These elements are highly valued today for the positive contribution they make to the quality of the environment as well as for benefits to the local economy and tourism, in particular these include:

- Saltaire World Heritage Site
- Over 2289 listed building entries on the National Heritage List for England
- 59 Conservation Areas
- 14 Historic Parks and Gardens
- 194 Scheduled Ancient Monuments
- 1 Historic Battlefield Site at Adwalton Moor, Tong

5.4.74 Criterion D and E seeks to ensure the protection and enhancement of Listed Buildings. There are a number of heritage assets within the District which have fallen into a state of disrepair and are at risk of being lost. Some of these assets feature on English Heritage's 'Heritage at Risk' register. It is a priority for the Council to ensure that these assets are sensitively protected, conserved and brought back into a viable use. Where appropriate, heritage assets at risk will be secured through planning conditions and obligations.

5.4.75 Where support is given to development proposals which result in harm to designated or undesignated heritage assets, in advance of commencement of development the local planning authority may require by planning condition, the implementation of a programme of archaeological recording to the satisfaction of the authority's archaeological advisors.

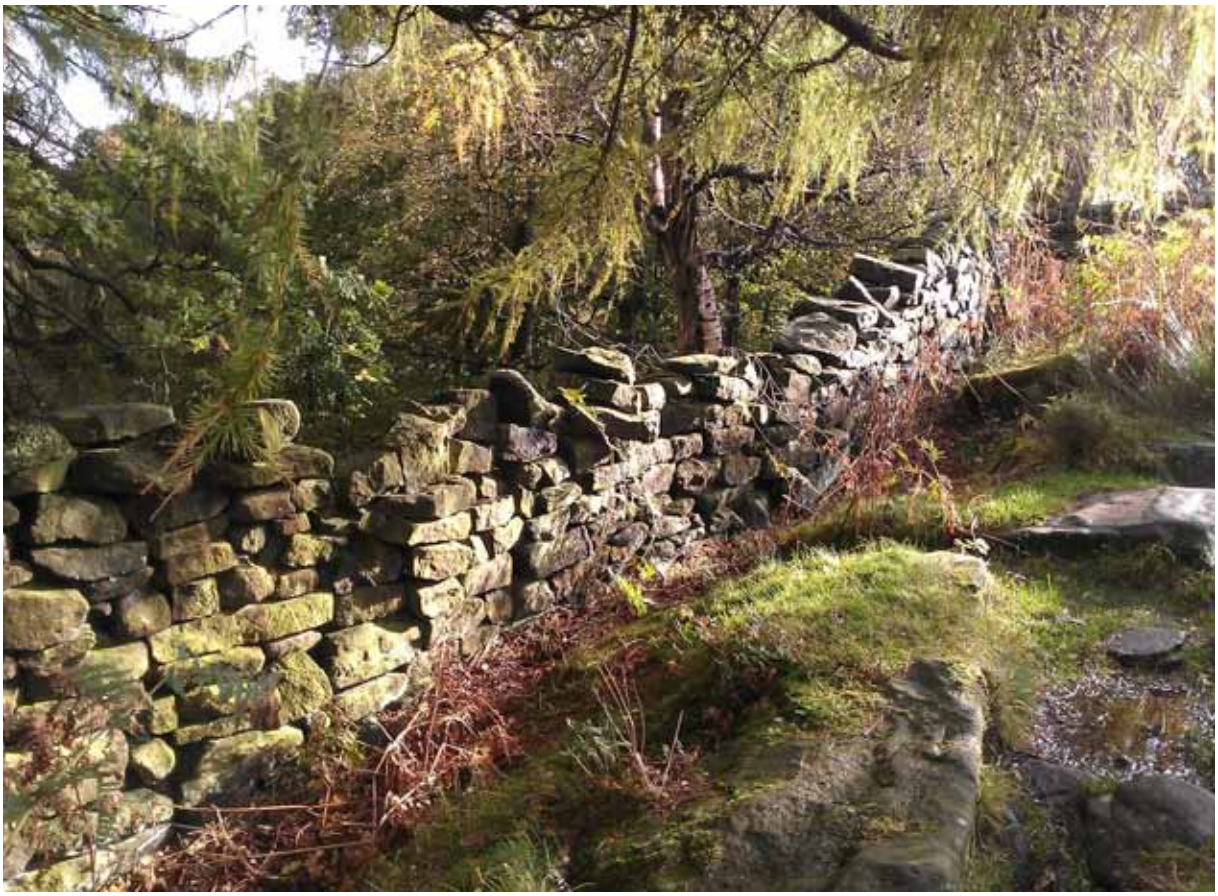
Non Designated Heritage Assets

5.4.76 The Bradford District contains many other heritage assets in the form of buildings, structures, archaeological and below ground remains that are, as yet, undiscovered that are of local historic and conservation importance. These include local parks and gardens including: Heber's Ghyll; Milner Field; Cliffe Castle and Devonshire Park; and Bierley Hall Wood. Bradford's Conservation Area Assessments and Appraisals identify key unlisted buildings and structures within these conservation areas.

5.4.77 Criterion F recognises the important contribution that non-designated heritage assets can have within a local area. Although these assets are not afforded the same statutory level of protection through designation, they can make a significant positive contribution to the character and appearance of the area in which they are situated. In accordance with the NPPF (s12; para 139) non-designated heritage assets are subject to the objectives and policies within this strategy.

5.4.78 Criterion C and F seek to ensure the protection and enhancement of all heritage assets. In support of this policy, the Council requires development proposals affecting a heritage asset to be accompanied by a Heritage Statement which should demonstrate a full understanding of the significance of the asset and mitigation measures. Proposals will be expected to respect and reinforce the distinctive character of the asset and its setting. Account should be taken of the guidance adopted by the Council, particularly Conservation Area Assessments/Appraisals and other guidance documents.

5.4.79 The link between regeneration and the built historic environment is strong and the two are not mutually exclusive. Criterion H recognises the important role the historic environment can play in regeneration schemes. There have been a number of successful schemes in recent years, particularly in the city centre and principal towns. Whilst heritage focused regeneration opportunities must be encouraged, restoration and re-use of heritage assets for the specific benefit of their significance must also be supported.



Top of Hebers Ghyll, Ilkley Moor

Landscape

5.4.80 The European Landscape Conventions definition of landscape is 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'**.** One of the definitions of landscape in 'The Guidelines for Landscape and Visual Impact Assessment' is as follows:

'*Landscape results from the interplay of the physical, natural and cultural components of our surroundings. Different combinations of these elements and their spatial distribution create the distinctive character of landscapes in different places, allowing different landscapes to be mapped, analysed and described.*'

5.4.81 Natural England emphasises that England's landscapes are valued by people for a variety of reasons and each is characterised by its own pattern of geology, landform, soils, vegetation, land use and human settlement, which creates local distinctiveness.

5.4.82 The 'Character Map of England',, produced by Natural England subdivides the District into 3 main character areas; the Southern Pennines, the Yorkshire Southern Pennine Fringe and the Nottinghamshire, Derbyshire and Yorkshire Coalfield. The Millstone Grits of the Southern Pennines to the west of the District give rise to substantial areas of upland heath and blanket bog. In contrast, the coalfield areas of Bradford are more dominated by urban influences, and the rapid expansion of industry, settlement and transport networks interspersed by woodlands and valley wetlands.

5.4.83 Significant areas of the District form part of the Yorkshire Southern Pennine Fringe, a transition zone, characterised by gritstone industrial settlements in the valleys surrounded by pastoral agriculture in the foothills. The gritstone terraces and stone walls of the pasture give a visual unity to the landscape.

5.4.84 The purpose of the policy is to safeguard and enhance the character of local landscapes and the setting of settlements within the district. It is essential to maintain and enhance valued and distinctive landscapes in circumstances when in order to accommodate growth in the District's population, greenfield sites are being put forward for development and a need for local green belt releases has been identified in the Local Plan. Work that describes and identifies the key component elements of local character needs to be used to determine potential locations for all types of development including housing, commercial uses, energy and transport infrastructure and minerals exploitation and to appraise individual proposals. Changes in land management regimes can also have an impact on the landscape and need to be assessed.

5.4.85 Detailed landscape character assessment of Bradford District has been carried out in-house, based upon the approach to distinct landscape character developed by Natural England. The descriptions of the different character areas and principles identified in the assessment will be used to inform decision-making and appraisal of proposals.

5.4.86 The character of the Districts' landscapes is very varied, ranging from the rugged open moorland of the South Pennine uplands to rolling farmland, and open river valleys to wooded hillsides. The diversity of landscape character areas, form an important element in Bradford's identity and the quality of life of its residents. The landscape backdrop is a significant influence on the character of individual settlements. Identified landscape character is therefore considered to be a key component of local distinctiveness that helps to create a 'sense of place'.

5.4.87 The policy seeks to ensure that proposals for development and other projects, that could have an impact on the landscapes within the district, particularly, but not exclusively, those on the edge of settlements, contribute towards the management and enhancement of the Districts' landscapes and biodiversity and heritage resources

5.4.88 The landscape policy contributes towards a range of other objectives, including the maintenance and restoration of habitats and the protection of historic assets (including parks and gardens) and their settings. The landscapes of the District are of tourism, leisure and recreational value and make a significant contribution to the appeal and character of the District. The policy evolved in response to issues raised by consultees and the sustainability appraisal; key concerns were local distinctiveness, securing biodiversity gains and the need for landscape enhancement, particularly in the urban fringe. The issue of local distinctiveness is also addressed in the Design Section.

5.4.89 Within Bradford open moorland provides the backdrop to the wide shallow valleys of the rivers Aire and Wharfe, where locations along the moorland edge offer long extensive views. Within such an open landscape, in areas where there are few other structures, vertical elements such as wind turbines can be prominent features. Recently, due to support for energy from renewable and low carbon sources, there has been an increase in the numbers of individual turbines proposed and implemented, leading to cumulative impacts on the landscape.

5.4.90 This policy reinforces the criteria identified in Strategic Core Policy 6 in relation to elements that contribute towards Green Infrastructure. It complements the heritage policy in relation to historic elements in the landscape, the importance of setting and cultural associations. It has strong links with Policy EN2 relating to biodiversity as it also seeks to encourage greater connectivity and enhancement of habitats. Establishing ecological networks and landscape enhancement can achieve significant benefits for areas within the urban fringe where landscapes have been greatly influenced and/or degraded by human activity. In appropriate locations, protecting and linking belts of woodland can enhance the landscape and improve habitat connectivity. Reducing habitat fragmentation and increasing woodland cover can also make a contribution towards the District's resilience to climate change.

5.4.91 The NPPF supports the setting out of criteria based policies against which proposals for development affecting landscape will be judged and which give appropriate weight to the contribution made to wider ecological networks. Protecting and enhancing valued landscapes, geological conservation interests and soils is one of the means identified through which planning should make a contribution towards conserving and enhancing the natural environment.

5.4.92 When preparing plans to meet development needs, the aim should be to minimise adverse effects on the local and natural environment. The NPPF makes it clear that plans should seek to allocate land with the least environmental or amenity value.

5.4.93 The work produced by Natural England, in consultation with a wide range of stakeholder groups, on Natural Character Area Profiles provides detailed descriptions of character and important issues and analyses landscape change and opportunities for enhancement. The 3 Natural Character Areas within Bradford District are; the Southern Pennines, the Yorkshire Southern Pennine Fringe and the Nottinghamshire, Derbyshire and Yorkshire Coalfield. The work starts to make the link between the features and appearance of the landscape with the ecosystems services it provides.

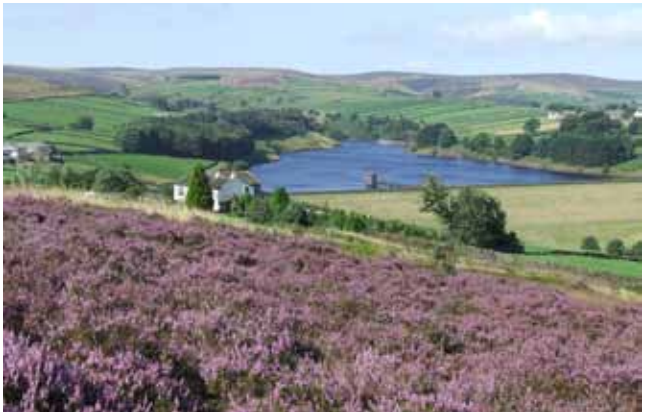
5.4.94 The Southern Pennines profile describes the landscape as one of large-scale sweeping moorlands with gritstone settlements within the valleys. The area contains internationally important mosaics of moorland habitats which support rare bird species and is also important in relation to water supply with many reservoirs providing water for nearby conurbations. This dramatic landscape offers a sense of escapism for those living in the urban areas and inspired the writing of the Brontes.

5.4.95 A detailed landscape character assessment of the District has been carried out, subject to consultation and published in the adopted Landscape Character SPD. The appraisal identifies ten specific, distinct and unique landscape character areas (see Figure EN4 page 225), and sets out a description of each area. Important positive features and detractors are identified and an analysis provided of the areas sensitivity to change.

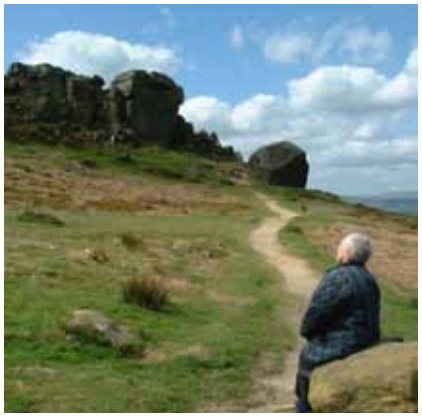
5.4.96 Landscape character assessment allows proposals to be addressed in relation to the key characteristics, sensitivities and special qualities of a local landscape typology. One of the distinctive qualities that landscapes of the South Pennines in Bradford District have are the locations, settlements, features and viewpoints that have cultural associations with the writings of the Brontes, who lived in Haworth. Rombalds Moor, settled since prehistoric times, and rich in remains (including numerous scheduled ancient monuments of carved rocks, burial mounds and stone circles) and the distinctive cow and calf rocks is also of significant value

5.4.97 Landscape character assessments and the habitat action plans in Bradford's BAP both recognise the important role that boundary structures play in relation to the ecology, landscape and history of the District. Hedgerows and drystone walls can be threatened both directly by development decisions and indirectly when land use change leads to a more gradual process of neglect. Other historic elements in the landscape may relate to early agricultural systems and field patterns or to features linked to stages in the development of the textile industry, including trans-pennine routes and associated bridges and locks.

5.4.98 Work carried out at a district level by West Yorkshire Ecology to identify potential grassland, woodland, wetland and heathland networks also forms part of the evidence base for this policy. These maps can reinforce the importance of landscape features identified in character assessments, they can be used to focus the efforts of local authorities, key stakeholders and partners to maintain, restore and re-create landscapes and achieve biodiversity enhancement.



Haworth Moor and Lower Laithe Reservoir



Cow and Calf Rocks, Ilkley Moor

Policy EN4: Landscape

A. Development Decisions as well as Plans, policies and proposals should make a positive contribution towards the conservation,` management and enhancement of the diversity of landscapes within the District of:

- **Airedale**
- **Thornton and Queensbury**
- **Esholt**
- **Tong Valley**
- **Pennine Upland**
- **Rombalds Ridge**
- **Wharfedale**
- **Wilsden**
- **South Bradford**
- **Worth and North Beck Valley**

This should use the approach set out in the Landscape Character Assessment SPD.

B. The following criteria will also be used to assess whether change can be considered acceptable:

1. **The potential for adverse landscape and/or visual effects**
2. **The importance of cultural associations, historic elements in the landscape and the setting of settlements and heritage assets**
3. **The opportunity to contribute towards positive restoration of landscapes, particularly in the urban fringe, achieve greater habitat connectivity, enhancement of characteristic semi-natural vegetation and accessible natural greenspace**

In circumstances where impacts can be managed and the degree of change made acceptable, contributions need to relate to the scale of the project under consideration, and the significance of any assets affected.

Where there is potential for adverse landscape and/ or visual effects, a landscape and visual impact assessment or appraisal will be required. Proposals also need to fulfil the criteria set out in Policy DS2 Working with the Landscape.

OUTCOMES	INDICATORS	TARGETS
Locally distinctive landscape character and quality will have been safeguarded and enhanced. Proposals make a positive contribution to the management and enhancement of landscapes within the district.	Number of landscape management proposals required and achieved. Operational Progress made towards National Character Area targets in relation to habitats created, as identified in Appendix 12. Operational Areas of amenity woodland created Operational	

LEAD ROLES	MAIN MECHANISMS
Bradford Council **Natural England** **Forest of Bradford** **Environment Agency**	Local Plan, Development Management, Landscape Character Assessment, Local Biodiversity Action Plans Strategies, plans and investment decisions Grants and management regimes Catchment Flood Management Plans, River Basin Management Plans Leeds City Region Green Infrastructure Strategy

5.4.99 A landscape character assessment approach should be used to assess the potential impact of development and to inform decision making on future locations for development. The framework set out in the Shipley and Canal Road Corridor AAP, in the Allocations DPD and in site briefs will identify more detailed requirements for ecological and landscape appraisal, for assessment of the impacts of development and for integrating enhancement schemes.

5.4.100 Landscape and visual impact assessment (either as part of an Environmental Impact Assessment or as an 'appraisal' of proposed development) provides a means of assessing the potential landscape and visual effects of proposals The District's Landscape Character Assessment will be used to inform and appraise individual proposals, using the approach set out in the adopted Supplementary Planning Document.

5.4.101 Landscape character assessment and visualisation techniques provide a means of assessing the potential impact of proposals, provided they are used to influence decision-making in relation to siting and design considerations, both for small-scale projects, which can have a cumulative impact, and in relation to identifying locations for more significant development. The Design Section, and particularly Policy DS2 Working with the Landscape, also contributes towards the framework for appraisal.

5.4.102 Landscape character assessments, linked to historical and cultural associations, sensitivity and the criteria identified in the above are part of a tool kit to identify valued landscapes. They can form the basis for a process of engagement and dialogue with local communities as part of the Neighbourhood Plan-making process.

5.4.103 Green Infrastructure planning can be seen as a complementary process, as in many locations the mapping of key strategic assets will overlap. However in order to fulfil both purposes, networks would need to have a continuity of natural features. Implementing the policy and using this information to inform decision making will require the mapping and assessment of a number of different layers of information relating to landscape character and sensitivity, biodiversity and GI.

Trees and Woodland

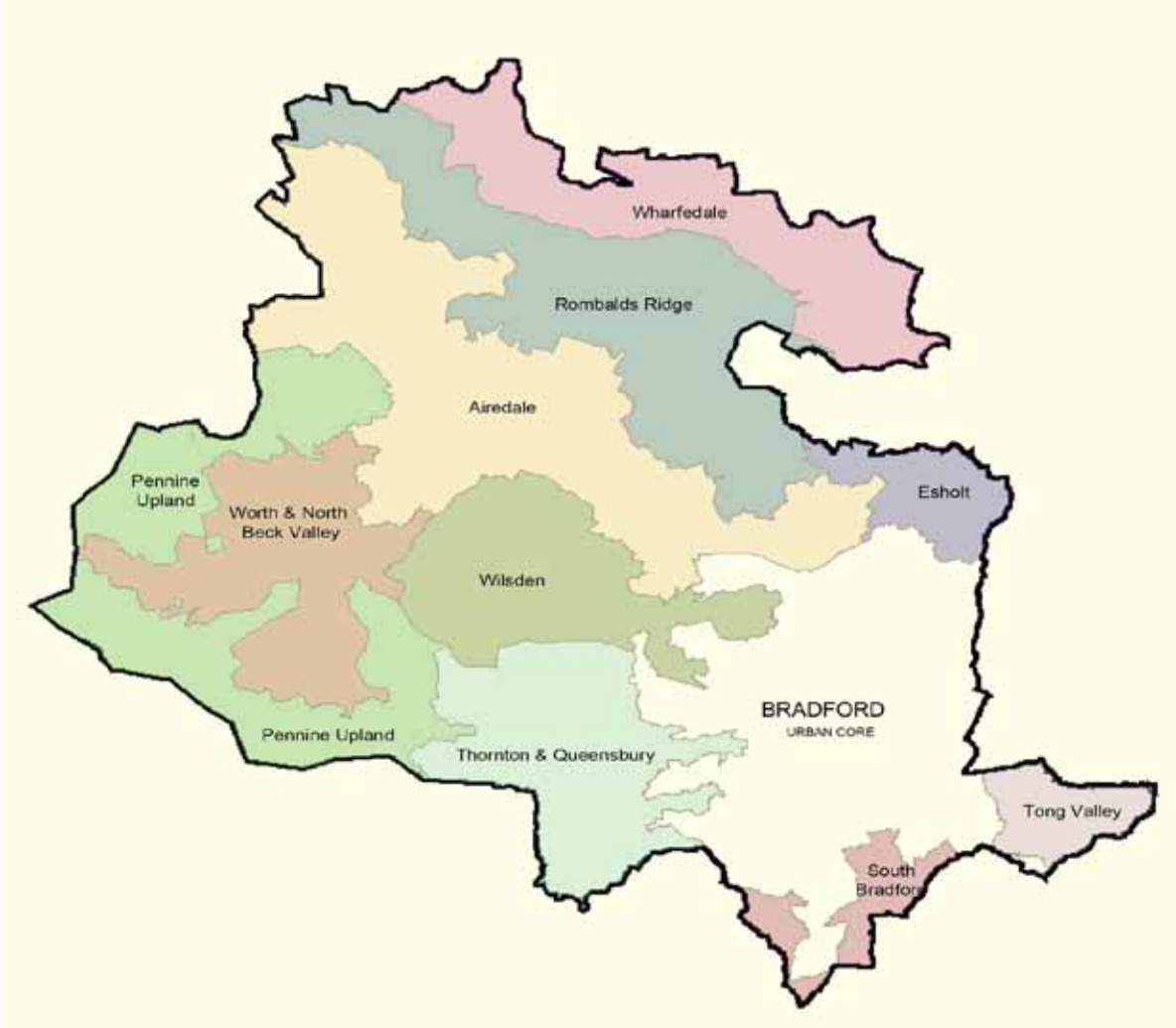
5.4.104 Woodlands and trees are key elements of a sustainable environment. They enhance both urban and rural landscapes, provide valuable habitats for wildlife, create opportunities for

leisure and recreation and combat pollution by providing oxygen and absorbing dust and carbon dioxide. Trees can also help reduce heat loss from buildings and contribute to energy conservation objectives by providing shelter, minimising the effects of driving rain and reducing exposure.

5.4.105 The purpose of the policy is to preserve and enhance the contribution that trees and woodland cover makes to the character of the district and to ensure that this is taken into account in relation to the identification of land for future development through the Local Plan and in the appraisal of individual proposals for development.

5.4.106 Trees and woodland merit special attention as the district has a relatively low level of woodland cover, because woodland habitats take time to evolve and become established and due to the fact that trees provide such a wide range of services for both the District's residents and for wildlife.

Figure EN4: The Bradford District Landscape Character Areas

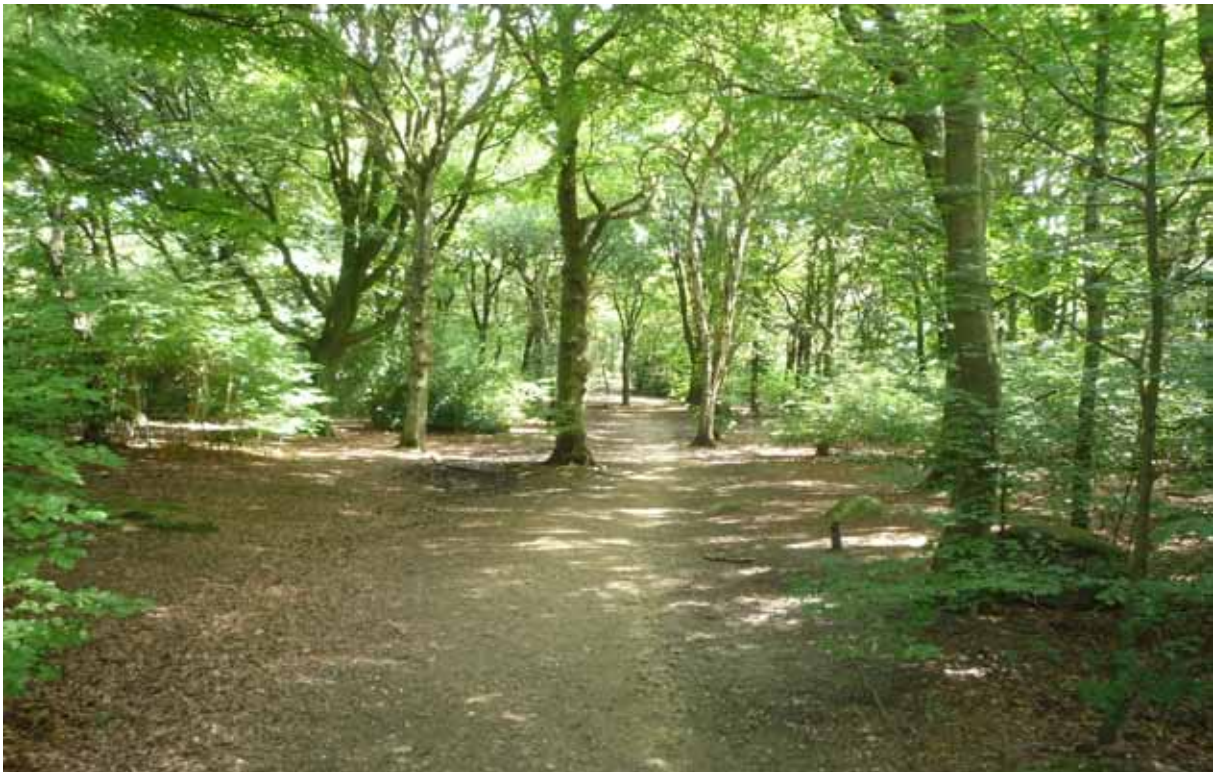


5.4.107 Less than 5% of Bradford is woodland compared to a national average of 10%. Protecting and enhancing the District's woodlands in the context of climate change, potential threats from disease and the need to accommodate population growth will be a significant challenge.

5.4.108 The Woodland Strategy expresses the Council's commitment to improving the amount of woodland cover and quality of woodlands in Bradford. All landowners need to be encouraged to improve the upkeep and management of woodlands and trees to ensure that these valuable assets continue to benefit future generations. The identification of future locations for development needs to make a positive contribution towards enhancing woodland cover. Where existing woodlands or new planting are important to the successful integration of new development into the landscape, long term management plans will be required.

5.4.109 The Forest of Bradford has increased woodland/tree cover throughout the District in partnership with local communities, 220 hectares new woodland (500,000 trees) and 12km new hedgerows since 1997 and continues to make progress..

5.4.110 Consultation responses identified ancient and semi-natural woodland and aged/ veteran trees as clear priorities. Ancient semi-natural woodlands (dating back to 1600 or before) have immense biodiversity value but cannot be replaced once destroyed. The District has over 550 Ha of ancient woodlands, 285 Ha of which is classed as ancient semi-natural (i.e. not replanted) and these will be strongly protected against development; aged or veteran trees also have irreplaceable biodiversity value. Other specific woodland types to be protected, enhanced and re-created are Upland Oak Woodland and Wet Woodland.



Hirst Wood

5.4.111 Tree Preservation Orders will be actively used to sustain the landscape character of the District and to influence the layout of new development. They offer a means of seeking to ensure that mature and healthy trees are retained where development occurs, providing visual amenity for future residents and the wider community.

5.4.112 Trees need to be managed during the construction period to avoid damage and tree loss. Damage needs to be avoided to prevent unnecessary tree loss and potential threats to life and property caused by unhealthy trees.

5.4.113 The policy relating to trees and woodland supports and has strong links with policies relating to Green Infrastructure, climate change, biodiversity, open space, landscape and design.

5.4.114 In preparing the woodland strategy, the Council has mapped areas of woodland in the District. Potential opportunities to create woodland networks have also been identified.

Policy EN5: Trees and Woodland

The Council will seek to preserve and enhance the contribution that trees and areas of woodland cover make to the character of the District.

A. In making decisions on planning applications and in local plans, trees and areas of woodland that contribute towards:

1. The character of a settlement or its setting or the amenity of the built-up area
2. valued landscapes or
3. wildlife habitats

Will be protected.

B. Proposals which would have adverse impacts or destroy ancient semi-natural woodland, including replanted ancient woodland and or aged/veteran trees will not be permitted.

C. The planting of additional trees and woodland will be encouraged and proposals for development should result in no net loss of woodland.

D. The Council will continue to make Tree Preservation Orders where necessary, especially within and adjacent to development and will rigorously enforce such orders. On development sites, the Council will require the retention of those trees which are healthy and which have or would have a clear public amenity benefit. The Council will require the protection during construction of trees to be retained and, where appropriate, replacement tree planting for trees lost or damaged during construction.

OUTCOMES	INDICATORS	TARGETS
Existing trees and woodland have been protected. Additional areas of woodland, with benefits for biodiversity and landscape, have been created. There has been a net increase in tree and woodland cover with amenity benefits	Areas of protected woodland lost Operational Areas of amenity woodland created Operational	

LEAD ROLES	MAIN MECHANISMS
Bradford Council **Forest of Bradford**	Woodland Strategy

Energy

5.4.115 Implementing renewable and low carbon energy is an important part of the response to the challenges of both climate change and security of energy supply. Renewable and low carbon energy sources are low or zero emission alternatives to fossil fuels as a source of energy. Renewable Energy occurs naturally and continuously in the environment, such as energy from the sun, wind, waves or tides. Low carbon energy is about the generation of heat and power with lower emissions than conventional means, by using more efficient technologies, fuels with lower carbon content or capturing and storing emissions.

5.4.116 The purpose of the policy is to encourage the provision of renewable and low carbon energy through the planning system, but also to recognise the role of planning in setting the framework to allow assessment of potential impacts and to influence decision-making based on assessment.

5.4.117 In order to meet both the Government and Bradford Council's carbon-cutting ambitions, higher levels of energy efficiency and greater use of low carbon and renewable energy are required. Measures should focus not simply on achieving renewable means of producing electricity but also on renewable forms of heating and the implications for transport. The Energy Policy therefore has strong links to Strategic Core Policy 2 relating to Climate Change and Resource Use.

5.4.118 Both renewable and low carbon energy are decentralised energy systems meaning that they do not rely on the high voltage transmission network or the gas grid. This means that there is a high initial outlay associated with these technologies, especially while the market is relatively small and the national energy infrastructure needs to be adapted to accommodate them.

5.4.119 In relation to setting out policies to encourage the provision of renewable and low carbon energy, one of the key issues is to positively identify local requirements, in a manner that allows bespoke design solutions to be identified that take account of feasibility and viability.

5.4.120 The Sustainability Appraisal identified potential for conflict with objectives supporting biodiversity, landscape, historic assets and health and well being. However it was considered that renewable energy developments could have a beneficial impact on the local economy, where local supply chains exist. The policy therefore identifies the need to assess a full range of environmental, economic and social impacts of proposals. The SA also suggested that further consideration needed to be given to the potential for generating renewable and low carbon energy to serve broad areas proposed for development.

5.4.121 Identifying stringent criteria for assessing the impacts of renewable energy generation upon the natural environment, landscape and biodiversity was supported in earlier rounds of consultation on Core Strategy policies. Accordingly, the policy emphasises the need to make a full appraisal of environmental impacts, to use this in decision-making and where appropriate to incorporate mitigation measures. Respondents considered that the Local Plan should promote those forms of renewable and low carbon energy that have a less significant impact on the landscape and environment. The requirements identified in Policy EN4 Landscape, in relation to potential impacts on landscape character and the need for the application of visualisation techniques therefore need to be applied.

5.4.122 In assessing the Energy Policy, the Habitats Regulations Assessment identified potential for adverse impacts on important bird species. This could occur via the impact pathway of 'collision mortality risk and/ or displacement from wind turbine developments. Amendments to the Energy Policy were therefore recommended and accordingly these have been made. Assessment of potential impacts, in relation to HRA stipulations, would also need to take account of Strategic Core Policy 8 relating to the South Pennine Moors Zone of Influence and EN2 relating to biodiversity.

5.4.123 The NPPF supports the role of planning in encouraging the delivery of renewable and low carbon energy and associated infrastructure. Local planning authorities are advised to design their policies to maximise renewable and low carbon energy development, while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts. Planning is considered to have an important role to play in the delivery of new renewable and low carbon energy infrastructure. Adverse impacts need to be taken into account, including cumulative landscape and visual impacts.

5.4.124 A study, commissioned by Local Government Yorkshire and Humber to assess the resource for low carbon and renewable energy generation across the Yorkshire and Humber region, was published in 2011. The study identifies a range of opportunities within the District, including potential for wind energy and hydro generation. Many areas of Bradford have the density necessary to support district heating networks and there are public buildings that could provide anchor loads for such networks. The study focused on identifying potential and opportunities for renewable energy, rather than setting targets. While past targets have been identified in regional policy, monitoring of progress made towards meeting targets has not, however proved easy to achieve, particularly in relation to the contribution made by micro-renewables.

5.4.125 The regional study recognised commercial wind as having the potential to make a significant contribution to the renewable energy resource. There are a number of factors that influence a district's capacity to accommodate groups of commercial scale wind turbines; wind speeds, the extent of the urban area and outlying settlements and landscape, environmental and ecological constraints. The Study recognised that further work needed to be done at a district level. National planning guidance identifies in some detail particular planning considerations that relate to wind turbines.

5.4.126 National planning guidance advises that in identifying suitable areas for renewable and low carbon energy 'local planning authorities will need to ensure they take into account the requirements of the technology and, critically, the potential impacts on the local environment, including from cumulative impacts.' The views of local communities likely to be affected are also considered to be important. When identifying suitable areas it is important to set out the factors that will be taken into account when considering individual proposals in these areas, which may be dependent on investigatory work underpinning the identified area. Recent ministerial statements have emphasised the importance of addressing planning impacts identified by affected local communities and the benefits of identifying suitable areas through the plan-making process.

5.4.127 Proposals will need to have an assessment of environmental, economic and social impacts. In relation to environmental impacts, some parts of the upland moorland areas are particularly unspoilt and are valued for tranquillity and wilderness appeal or are of historic importance because of their archaeology or other historic importance. Landscape character areas are supported in national guidance as a tool for assessment. Within Bradford open moorland provides the backdrop to the wide shallow valleys of the rivers Aire and Wharfe, where locations along the moorland edge offer long extensive views. Within such an open landscape, in areas where there are few other structures, vertical elements, such as wind turbines, can be prominent features, whereas smaller scale turbines are less intrusive when viewed in close conjunction with existing built and natural features. West Yorkshire Ecology have produced guidance for ornithological information required to support small wind turbine developments.

5.4.128 It is important therefore that the impact of development proposals on the landscape, (including peat soils) biodiversity, cultural associations and amenity is carefully assessed and balanced against the contribution that the development would make to meeting energy needs. The siting, design, materials and colour of the turbines and ancillary structures needs to be such that their visual impact is minimised. Removal of structures and full restoration of the site, should turbines cease to operate for more than, say 6 months, is also an important consideration.

5.4.129 Assessment of social impacts will include a range of local amenity considerations and whether or not support exists within local communities for proposals. Local amenity considerations will include assessments of noise and shadow flicker and the potential for disruption during the construction period.

Policy EN6: Energy

A. Planning decisions as well as Plans, strategies, investment decisions and programmes developed by the Council and its partners will maximise improvements to energy efficiency and support the development of renewable and low carbon sources of energy by:

1. **Identifying suitable areas and opportunities for low carbon and renewable energy**
2. **Ensuring that future development takes place in locations and at a scale that can make a positive contribution to the districts capacity for renewable and low carbon energy**

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3. Setting out local requirements for the use of decentralised energy and sustainability of buildings in the Allocations DPD, Bradford City Centre Area Action Plan and the Shipley and Canal Road Corridor DPD that promote the maximum use of decentralised energy in areas of greatest opportunity, while taking into account viability and feasibility.

B. All proposals for renewable and low carbon generation must include full assessment of the environmental, economic and social impacts and, where assessment shows that potential adverse impacts can be managed, the integration of measures to minimise such impacts. Assessment of environmental impacts will need to include cumulative landscape and visual impacts and to ensure that development will have no adverse impact on the integrity of the South Pennine Moors SAC/SPA.

OUTCOMES	INDICATORS	TARGETS
Renewable and local carbon energy capacity in the district will have increased.	Mega Watts (MW) of installed renewable energy and low carbon energy capacity which required planning permission IND13(EV)	A net increase in installed renewable and low carbon energy over each monitoring period

LEAD ROLES	MAIN MECHANISMS
Bradford Council **Leeds City Region**	Low Carbon Transition Plan leading to a range of incentives Climate Change Strategy

5.4.130 Recognising the potential for local authorities to assist in delivery of renewable and low carbon energy, the Council is committed to facilitating community led renewable energy generation projects and maximising the potential for delivery within the Leeds City Region. From a planning perspective there is a need to identify strategic opportunities for renewable energy, including the potential for accommodating facilities on brownfield land and to link renewable and low carbon energy potential with future locations for development.

5.4.131 For new development the main driver for increasing the contribution from microgeneration technologies is likely to be the progressive tightening of the Building Regulations, up to and including the introduction of a zero carbon requirement for homes and other buildings. This issue is addressed in Policy HO 9 relating to Housing Quality. Key sustainable design principles for increasing resilience to climate change and reducing resource use are identified in Strategic Core Policy 2 relating to addressing climate change and resource use.

Flood Risk and Water Management

5.4.132 The overall objectives are to appraise, manage and reduce the risk of flooding. Policy EN7, set out below, identifies principles to guide the process of identifying locations for future development while seeking to reduce flood risk, assess proposals that come forward and adopt a positive approach to water management. The NPPF defines flood risk as: *'a combination of the probability and the potential consequences of flooding from all sources – including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers and drainage systems, and from reservoirs, canals and lakes and other artificial sources'*.

5.4.133 The most important principle, in terms of managing risk is that development should only be permitted in areas of high flood risk when there is no reasonably available land in areas of lower flood risk and the overall benefits of the development outweigh the risks from flooding. Risk should be reduced, at a strategic level, by safeguarding land from development that is required for flood water storage and defences and using the opportunities offered by new development to incorporate sustainable urban drainage, green infrastructure for water storage and the re-creation of the functional flood plain.

5.4.134 Bradford District includes the catchment areas of the River Aire and the River Wharfe, the later forming a main river within the River Ouse catchment. Both the Aire and the Ouse play an important role in the future planning of neighbouring authorities within the Leeds City Region and beyond. The strategic level of appraisal that has been carried out to date, identifies flood risk as an important issue that needs to be addressed, particularly in the Regional City and in Keighley and Ilkley.

5.4.135 The River Aire within Bradford District is characterised by a number of swift flowing upland streams which then flow down through the towns along the valley. The upper reaches of the River Aire within Bradford District have a largely rural character and the flood plain in the Silsden and Steeton with Eastburn area is quite extensive. The River Worth is one of the larger contributing catchments and joins the River Aire at Keighley. In areas where a need for local green belt releases or Greenfield development has been identified, consideration needs to be given to whether locating development in this area could lead to opportunities for improvements in Green Infrastructure and flood storage provision.

5.4.136 The middle reaches of the River Aire are heavily urbanised and contain the towns of Keighley, Bingley, Shipley and the City of Bradford. Between Keighley and Leeds the valley floor steepens and becomes narrower. The density of development within the valley has resulted in significant restrictions to the natural floodplain. Within these areas there is a need to strike a balance between promoting regeneration and reducing flood risk.

5.4.137 Periods of heavy rainfall in the uplands can therefore produce high flows in the tributary catchments between Keighley and Bradford. This problem becomes most acute in densely developed areas where gradients are steep, for example within the Bradford Beck corridor.

5.4.138 The channel of Bradford Beck has been heavily modified and while lengths to the west of the city are open, most of its length lies in culvert as it runs through the centre. While serious flooding has occurred in the past, the construction of the flood alleviation tunnel in 1993 reduced the risk of flooding. Recognising the importance of the Bradford Beck Corridor to regeneration of the District and the continuing need to manage flood risk, the Council commissioned new modelled flood event data, which takes into account both the sewer system and the diversion channel.

5.4.139 The functional floodplain identified for the Beck has been based on the Bradford Beck Model. This will allow further appraisal of flood risk issues as proposals for development are refined through master planning work and preparation of Local Plan Documents. It will be used to inform the sequential testing approach in relation to the CCAAP and SCRC and the identification of a blue/ green infrastructure corridor linked to the Beck.

5.4.140 The River Wharfe skirts the settlements of Addingham, Burley-in-Wharfedale and the central area of Ilkley. It is a fast reacting river with flood flow rapidly passing downstream. As well as flows that come down from the upper Wharfe, there are a number of smaller streams and becks descending from the moors in Wharfedale, which can be a source of flood risk in extreme rainfall events. The importance of flood storage provision within the Aire and Wharfe corridors and of flood risk from the Becks and links with green infrastructure are key challenges.

5.4.141 Surface water flooding can occur where extensive rainfall exceeds the drainage capacity in an area, as happened in a number of locations in the UK in summer 2007. The shape of the landform in Bradford, especially in and around a number of the built-up areas, makes the district potentially prone to flooding caused by direct rainfall, due to the extent of hard surfaces and a lack of sufficient sewer capacity. In addition to causing flooding to property, surface water runoff can lead to water quality issues and potential health risks. Through the consultation process there was support from a range of organisations for a policy approach that reflects the value of surface water for landscape, public realm and biodiversity, in addition to its primary role in reducing the intensity of flooding.

5.4.142 All forms of flooding and their impact on the natural and built environment are planning considerations. The Council's commitment to achieving the overall objectives of policy including those of appraising, reducing and managing all sources of flooding, is expressed in Strategic Core Policy 2 relating to climate change. Policy EN7 identifies a range of principles that need to be applied in order to achieve these objectives.

5.4.143 The overall approach to flood risk has strong links with the principles of Green Infrastructure, set out in Policy SC6 and the value for amenity and wildlife of creating space for water, in addition to reducing the intensity of flooding. The Rivers Aire and Wharfe Corridors and the South Pennine Moors, an important water catchment area, are identified as strategic GI assets. Adopting a more holistic approach to the network of beck corridors that run through the District, particularly the Bradford Beck corridor, will become increasingly important through the plan period. Data relating to flood risk, habitat connectivity and water quality needs to inform decisions made about green infrastructure. Water quality and management issues are addressed in EN8 relating to environmental protection.

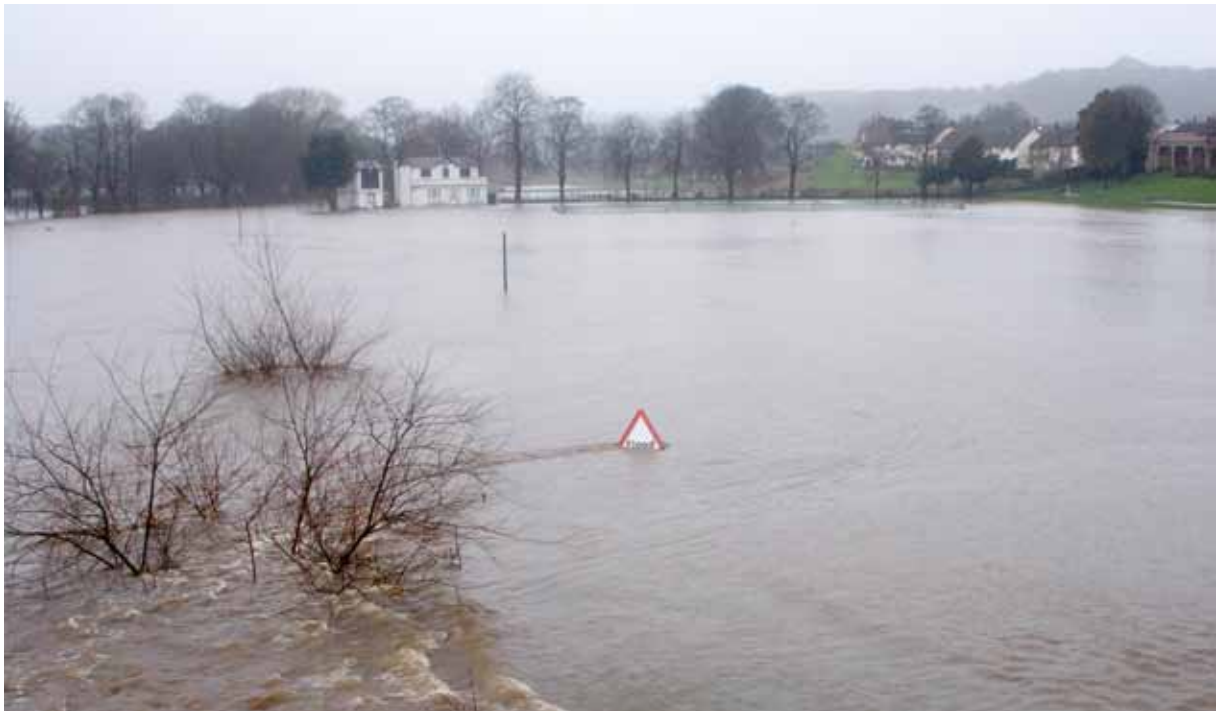
5.4.144 This approach reflects that in the NPPF, which requires Local Plans to take account of climate change over the longer term and plan new development to avoid increased vulnerability to the range of impacts arising from climate change. The sequential testing approach is supported and Technical Guidance has been produced setting out how this policy should be implemented. Key principles identified are; safeguarding land from development that is required for current and future flood management, using opportunities offered by new development to reduce the causes and impacts of flooding and developing policies to manage flood risk from all sources. When applying sequential testing principles to the choice of sites for future development, where data exists, all sources of flood risk will be taken into account, including those associated with ground water flooding.

5.4.145 Following the 2007 floods and the Pitt Review, the Flood and Water Management Act 2010 has given Lead Local Flood Authorities responsibility for identifying sources of local flood risk and reducing the likelihood and impacts of local flooding. These sources include surface run off, groundwater and flooding from smaller rivers and streams. When fully implemented, the Act will end the automatic right to connect surface water drains and sewers to the public sewerage system, with developers being required to use Sustainable Urban Drainage (SUDs) in new development, where practicable. Issues relating to the adoption and future maintenance of SUDS will need to be resolved by local authorities.

5.4.146 The Draft Regional Flood Risk Assessment (RFRA) and the Strategic Flood Risk Assessment (SFRA) provide data and guidance to inform the flood risk policies in the Core Strategy. Bradford's Level 1 SFRA document has been prepared by JBA Consulting. The SFRA identifies the functional flood plain (Flood Zone 3b), comprising largely of open and undeveloped land where water has to flow or be stored in times of flooding. It also identifies areas naturally vulnerable to surface water flooding and climate change layers, which will inform the identification of locations for future development.

5.4.147 The SFRA provides a framework for the overall appraisal and management of risk. It allows the identification of land with the lowest probability of flooding that would be appropriate to the type of development or land use proposed. Information from The SFRA and Sustainability Appraisal will be used to demonstrate the principle of sequential testing at a strategic level.

5.4.148 Policy EN7 supports the extent of the functional flood plain identified in the SFRA, allowing only water compatible uses and essential infrastructure after the Exception Test has been passed. The SFRA advises that the functional floodplain should be considered as essential green space infrastructure and be retained for the natural use of flood water. It



Roberts Park, Saltaire

puts particular emphasis on the strategic importance to communities downstream of the substantial system of washlands along the Aire upstream of Bradford.

5.4.149 While major parts of urban Bradford lie outside the flood plain, the SFRA notes that some built up areas are at risk of flooding from a number of different sources. Flooding has been recorded when the River Aire overtops into the Leeds-Liverpool Canal, causing increased flood risk to communities located close to the canal network. Shipley is identified as an area at risk from a number of different sources of flooding, as is Keighley which has experienced groundwater and surface water flooding as well as fluvial flooding.

Policy EN7: Flood Risk

A. The Council will manage flood risk pro-actively and in assessing proposals for development will:

1. **Integrate sequential testing into all levels of plan-making**
2. **Require space for the storage of flood water within Zones 2 and 3a**
3. **Ensure that any new development in areas of flood risk is appropriately resilient and resistant**
4. **Safeguard potential to increase flood storage provision and improve defences within the Rivers Aire and Wharfe corridors**
5. **Manage and reduce the impacts of flooding within the beck corridors, in a manner that enhances their value for wildlife**
6. **Adopt a holistic approach to flood risk in the Bradford Beck corridor in order to deliver sustainable regeneration in LDDs and in master planning work**
7. **Require that all sources of flooding are addressed, that development proposals will only be acceptable where they do not increase flood risk elsewhere and that any need for improvements in drainage infrastructure is taken into account**
8. **Seek to minimise run-off from new development; for Greenfield sites run off should be no greater than the existing Greenfield overall rates**
9. **Require developers to assess the feasibility of implementing and maintaining SUDS in a manner that is integral to site design, achieves high water quality standards and maximises habitat value**
10. **Use flood risk data to inform decisions made about Green Infrastructure.**

Only support the use of culverting for ordinary water courses, and additional flood defence works that could have adverse impacts on the environment, in exceptional circumstances.

B. The Council will not permit development in areas shown as functional floodplain in the Bradford SFRA, with the exception of water compatible uses and essential infrastructure.

OUTCOMES	INDICATORS	TARGETS
Requirements for drainage design and surface water treatment have been identified and are in use. Overall flood risk is reduced and residual flood risk is managed. Site testing is carried out in order to integrate sequential testing into plan making. Provision is made to increase flood storage. The need for any major improvements in drainage infrastructure is identified.	Number of completed developments that met the requirements for surface water treatment. IND14(EV) SFRA work level 1 and 2 has been completed and agreed with the Environment Agency Operational Proportion of potential development sites wholly in Flood Zone 1 within each area or settlement. Operational Any major improvements identified as necessary in flood storage provision or drainage infrastructure are set out in the infrastructure plan Operational	A net increase in the number of completed developments that met the requirements for surface water treatment over each monitoring period IND14(EV)

LEAD ROLES	MAIN MECHANISMS
Bradford Council **Environment Agency**	Local Plan, Strategic Flood Risk Assessment Levels 1 and 2. Development Management, Surface Water Management Plans, Local Flood Risk Assessments Aire and Wharfe Catchment Flood Risk Management Plans

5.4.150 The flood risk and water management policy will be implemented using the framework set out in the SFRA Level 1 which provides guidance for planners and developers. A sequential testing approach will be followed at all levels of plan-making, starting with the core strategy. The need for more detailed work will be addressed, where the appropriate conditions are met. Development proposals and site specific flood risk assessments will be assessed by the Council's Drainage Team and the Environment Agency.

5.4.151 As climate change will increase the probability of flooding in the future, assessment of the potential of land within high risk Zones 2 and 3a needs to include identifying space within

sites for the storage of flood water and safeguarding these areas from development. The extent of this space and of mitigating measures needs to be determined by more detailed flood risk assessment and by the scale and impact of development. Assessment of the longer term benefits of retaining open land in the Bradford Beck Corridor will form an important element in this work.

5.4.152 Within the Shipley and Canal Road Corridor, work is underway on identifying a blue/green infrastructure corridor to improve connectivity and to reduce flood risk. A linear park is being proposed at the issues and options stage, which will form a unified spine of linked green spaces along the corridor. The aim is to develop an integrated, holistic approach to Green Infrastructure provision along the Beck corridor to achieve biodiversity enhancement and water quality and flood risk management improvements.

5.4.153 Catchment Flood Risk Management Plans are a vehicle for future planning of investment in flood risk mitigation at a strategic level. As the Environment Agency progresses work on these Plans and the Council refines proposals for development and supporting infrastructure, priorities for improving flood storage and achieving multiple benefits through land management will become clearer.

5.4.154 A draft interim strategy for flood risk management has been produced by the Council and the University of Sheffield Pennine Water Group. The interim strategy describes a process for developing a long term strategy, aligned with the Pitt Review and the Government's response, to manage flood risk from surface runoff, groundwater and ordinary watercourses (small streams). The strategy seeks to develop the most effective ways of managing the different sources of risk and implementing the necessary measures.

5.4.155 Managing flood risk overall will mean identifying space for water as an integral part of development proposals. In areas where surface water flooding is known to be a problem, a holistic approach is required involving co-ordination at a strategic level of the design, construction, maintenance and improvement of sewers and watercourses. The production of surface water management plans could be the vehicle for achieving this in the future, bringing together local authorities, water companies and the Environment Agency. Where major development is proposed in an urban area vulnerable to surface water flooding, an assessment of the impact of proposals on drainage systems will need to be integrated into the planning process.

5.4.156 Continuing the process of infill development within a densely developed urban area has the potential to cause flooding of local watercourses and to result in drainage capacity being exceeded. The principle of using sustainable urban drainage to reduce the impact of new development in urban areas within the district is supported in the policy. Where proposals in the Core Strategy will lead to significant increases in density, particularly within the Bradford urban area, 'best practice' drainage techniques will need to be applied as mitigating measures to avoid increasing the risk of surface water flooding in future. The challenge will be to identify solutions that will maximise biodiversity and design benefits, while also addressing technical and maintenance issues.

5.4.157 Work has started on producing development control standards for drainage design and surface water treatment. In order to achieve high water quality standards, surface runoff should be passed through the correct levels of treatment prior to discharging to an outfall. The levels of treatment are dependant on the pollution risk from the development and the sensitivity of the receiving outfall.

5.4.158 In relation to individual planning applications, a flood risk assessment may be required for all sites and should be proportionate to the risk and appropriate to the scale, nature and locations of the development taking into account flooding from all sources.

Environmental Protection

5.4.159 The strategic policies and proposals for determining the broad locations for development set out in this document have the potential to affect the quality of land, air and water within the District. As a consequence of this, impacts could also affect public health and quality of life. Where development may have a potential impact on the quality of land, air and water, either directly or indirectly, particularly where there may be an impact on health, this is considered to be a material planning consideration.

5.4.160 New development therefore needs to be appropriate for its location and to take into account ground conditions and the effects of pollution on health, the natural environment or general amenity. As part of the process of identifying land for future development, assessment needs to be made of the known risks in the locality, and account taken of the sensitivity of the proposals to adverse effects from different forms of pollution.

5.4.161 The controls under the planning and pollution control regimes should complement rather than duplicate each other. Planning policies need to focus on whether a particular type of development is an acceptable use of the land under consideration and whether associated impacts can be managed, rather than the control of processes or emissions themselves. The policies set out below have been written within the parameters set by the NPPF, National Planning Practice Guidance and the relevant pollution control and risk assessment regimes.

Contaminated Land

5.4.162 Bradford District has a rich industrial heritage which has provided the foundations for its economic development. The textile industry dominated the area for 150 years and still forms an important element in the economic profile of the district. The legacy of past manufacturing, engineering and industrial processes, which still continue in many areas to provide a valuable source of employment, has resulted in the potential for residual contamination of sites across the District. Contamination in land can also have an impact on water quality.

Hazardous Installations

5.4.163 Bradford has a number of sites where significant quantities of potentially hazardous chemicals are used and stored. These chemical plants are a major source of local employment but the storage and use of these chemicals can place significant restrictions on development in the surrounding area.

5.4.164 When assessing potential locations for development the Council will take account of advice from the Health and Safety Executive. Advice from the Executive currently involves utilising the risk assessment tool PADHI (planning advice for developments near hazardous installations). Where circumstances change through the plan period, for example sites cease to store or use chemicals and/ or the Health and Safety recommendations are updated, then the Council's approach will be subject to review.

Nuisance

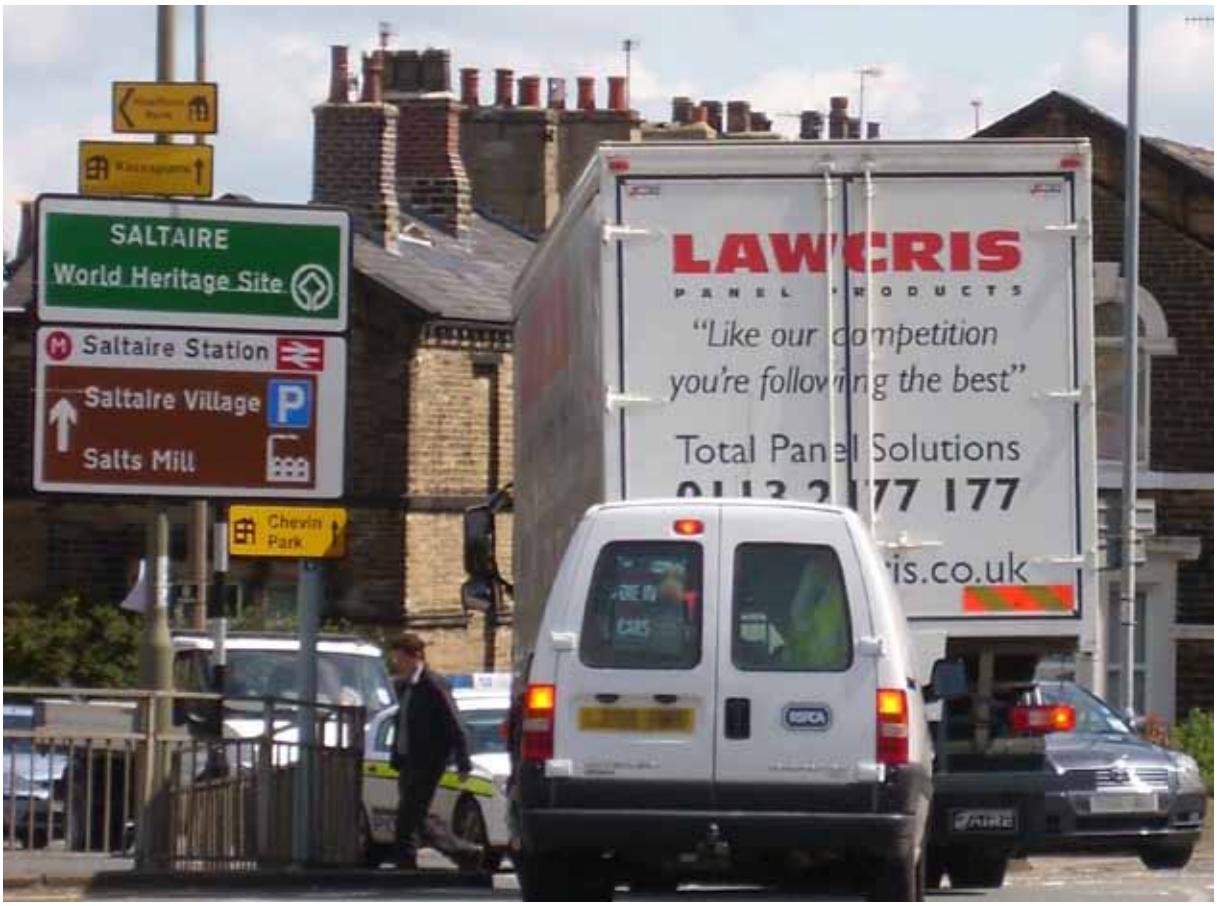
5.4.165 Nuisance issues, for example, noise, dust, odour and lighting can have a significant impact on quality of life, community cohesion, health and amenity. These issues are also

material planning considerations. When identifying land for future development and responding to developers proposals, account needs to be taken of existing land uses in the vicinity of the site e.g. proposed residential development adjacent to existing factory operating 24 hours per day and when new developments may create additional noise. Every effort must be made to ensure that nuisance problems are not generated during construction or operation.

Air Quality

5.4.166 Bradford Council has produced a District Air Quality Strategy, which was adopted in April 2011. The Strategy aims to take a proactive approach to help maintain and improve air quality within the District. A district-wide approach is needed due to the fact that air quality in Bradford is worse than in many other parts of the UK. Air quality problems in the district are mainly attributable to transport, in order to mitigate against this Bradford Council adopted a Low Emission Strategy in November 2013.

5.4.167 Addressing air quality issues is recognised to be complementary to the aim of achieving a reduction in transport emissions, reflected in the transport theme and which forms an important element in the District's overall approach to climate change. It also recognised that the impact of transport is a cross boundary issue and Bradford Council are working with the four other West Yorkshire Local Authorities to develop a West Yorkshire Low Emission Strategy which will (amongst other measures) provide consistent air quality and development control policy across West Yorkshire.



5.4.168 In certain residential areas in Bradford the annual mean objective for nitrogen dioxide is almost double the national health based standard. As a result in 2006 Bradford designated four Air Quality Management Areas. Poor air quality is linked to respiratory illness, heart disease and asthma and is therefore a significant Public Health issue in Bradford. The Public Health Outcomes Framework identifies that 5.3% of mortality in Bradford can be attributed to particulate air pollution.

Water Quality

5.4.169 The European Water Framework Directive came into force in 2000. The overall aim of the directive is to establish a legal framework to protect surface waters and groundwaters using a common management approach and following common objectives, principles and basic measures. The main environmental aims are prevention of the deterioration of aquatic water systems and the restoration of polluted surface water and groundwaters to a 'good status'.

5.4.170 The Water Framework Directive also contains objectives relating to ecology and the return of migratory fish to the Aire and Wharfe by 2021. The text relating to EN2 and the emphasis on connectivity draws attention to the need for improvement in fish passage through the District in order to achieve this.

5.4.171 Since 2004, when the directive was transposed into UK legislation, the Environment Agency has led work to implement the directive by producing River Basin Management Plans. Bradford District falls within the area covered by the River Basin Management Plan for the Humber, which addresses, at a strategic level, the integrated management of the water environment and supports initiatives to mitigate the effects of floods and droughts.

5.4.172 Policies in the Housing Section of this document emphasise the need to prioritise, wherever possible, the use and recycling of previously developed land. Policy HO6 aims to maximise the use of previously developed land based on appraisal of local conditions. Bringing forward brownfield land for housing development, particularly where this lies within densely developed transport corridors, and takes place on land formerly used for industrial activity raises issues relating to land, air and water quality which can have a significant impact on quality of life, community cohesion, health and amenity.

5.4.173 It also needs to be noted that development of greenfield or greenbelt land can raise environmental protection issues that need to be taken into account in identifying land for future development. These may relate to land stability linked with former mining activity, the presence of pollutants associated with current agricultural operations or the potential impacts on health and safety associated with electricity pylons and power lines.

5.4.174 In relation to air quality, the strongest link is with policies in the Transport Section, as transport is the major contributor to air quality problems within the District. Promoting the use of more sustainable modes of transport and reducing the need to travel should lead to a reduction in emissions, in support of air quality objectives.

5.4.175 The policy addresses the need to protect water resources, water quality and groundwater sources identified in the SA. The issue of water efficiency measures in new residential development is addressed in the policy in the housing section relating to sustainable design (Policy HO9).

Policy EN8: Environmental Protection

In order to protect public health and the environment the Council will require that:

Proposals which are likely to cause pollution or are likely to result in exposure to sources of pollution (including noise, odour and light pollution) or risks to safety, will only be permitted if measures can be implemented to minimise pollution and risk to a level that provides a high standard of protection for health, environmental quality and amenity. The following issues require particular attention:

A. Air Quality
In liaison with partner organisations, the Council will take a proactive approach to maintaining and improving air quality within the District in line with both National Air Quality Standards, the European Union limit values and the principles of best practice. Through a range of actions, It will seek to secure a reduction in emissions from sources which contribute to poor air quality.

Development proposals that have the potential to adversely impact on air quality will be required to incorporate measures to mitigate or offset their emissions and impacts, in accordance with the Low Emission Strategy for Bradford and associated guidance documents.

In areas where air quality is a matter of concern, development proposals will be required to deliver a positive impact on air quality in the district.

Development proposals must not exacerbate air quality beyond acceptable levels; either through poor design or as a consequence of site selection.

B. Land
Proposals for development of land which may be contaminated or unstable must incorporate appropriate investigation into the quality of the land. Where there is evidence of contamination or instability, remedial measures must be identified to ensure that the development will not pose a risk to human health, public safety and the environment. Investigation of land quality must be carried out in accordance with the principles of best practice.

C. Nuisance
Proposals for development must identify potential nuisance issues (including noise, vibration, odour, light and dust) arising from the nature of the proposal and address impacts on that development from existing land uses.

D. Water Environment
The Council will work with partner organisations to safeguard ground and surface water resources and to protect and improve water quality. Proposals for development will only be acceptable provided there is no adverse impact on water bodies and groundwater resources, in terms of their quantity, quality and the important ecological features they support. In the longer term, the aim will be to improve the ecological status of water within Bradford.

OUTCOMES	INDICATORS	TARGETS
Air Quality Air quality and health within the District has improved in line with both National Air Quality Standards and indicators and the principles of best practice. Through a range of actions, a reduction in emissions from sources which contribute to poor air quality has been secured. An improvement in the health of the District's population	The fraction of mortality attributable to particulate air pollution over each monitoring period. IND15(EV)	A reduction in exposure to particulate air pollution, resulting in a reduction in the fraction of mortality attributable to air pollution over each monitoring period. IND15(EV)
Land Investigation of land quality has taken place in accordance with the principles of best practice and where necessary remedial measures have been identified.	Number of contaminated sites that have been remediated. IND16(EV)	An increase in the number contaminated sites that have been remediated over each monitoring period IND16(EV)
Water Resources Water resources have been safeguarded. Water quality has been protected and improved.	Ecological status of rivers IND17(EV)	No deterioration in the ecological status of water bodies over each monitoring period. IND17(EV)

LEAD ROLES	MAIN MECHANISMS
Bradford Council **Environment Agency** **Yorkshire Water**	Strategic Flood Risk Assessment, Local Flood Risk Assessment, Air Quality Strategy, Low Emission Strategy River Basin Management Plan for the Humber

5.4.176 The issues identified in the policy are important in ensuring the health, safety and quality of life of those who currently live and work within the district and will do so in the future. In the context of the need to identify land to accommodate growth within the district, it is essential that parameters are also set to achieve mitigation and management of impacts and to ensure that locations identified for development take into account existing or potential sources of pollution.

Land

5.4.177 The focus on encouraging the re-cycling of brownfield land, the need to identify land suitable for accommodating future growth, combined with the District's history of industrial activity, mean that land contamination is frequently an important planning consideration within the District. This is often a significant issue where sites proposed for residential use were formerly occupied by manufacturing activities or other industrial processes. To successfully resolve issues relating to residual contamination, sites must be subject to appropriate investigation and assessment of potential risks associated with previous land uses to make them 'suitable for use'.

5.4.178 Addressing land quality issues is an important consideration in seeking to attract investment into the District. In the majority of cases, where the Local Planning Authority works in partnership with developers from the outset, contamination issues relating to previous land uses can be successfully resolved.

Air Quality

5.4.179 Addressing air quality issues within the District supports the aim of achieving an overall reduction in transport emissions, reflected in the transport section, and forms an important element in the District's overall approach to climate change. The Air Quality Strategy and the Low Emission Strategy set out the Council's commitment to taking a pro-active stance in addressing air quality issues. The need to accommodate growth, the topography of the District and the health issues facing residents combine to make the case for a policy approach that strongly supports addressing poor air quality.

5.4.180 The concentration of existing and potential future development within the Bradford 'basin' and transport corridors leading out of the city will exacerbate air quality issues in the future, without instigating actions to address this. This could lead to serious impacts on the health of the District's residents, who already have a relatively high incidence of deaths from heart disease and an incidence of asthma that, in some areas, is significantly higher than the national average.

5.4.181 There is also a need for action on a broader range of air quality issues due to the existence of significant areas where air quality is a matter of concern, beyond the relatively small-scale Air Quality Management Areas formally identified. Therefore all forms and scales of development with the potential to have an impact on overall air quality need to be included in the policy in order to address the potential incremental increase in emissions ('emissions creep') across the District.

5.4.182 As transport is the major contributor to air quality problems within the District, a Low Emission Strategy has recently been adopted. The Strategy identifies how the Council will work with the public and the private sector, and with other stakeholders, to implement measures which reduce the impact of emissions from traffic on public health and air quality.

5.4.183 The Council will undertake a programme of modelling to assess the air quality effects of proposed allocations on areas where air quality is a matter of concern, including European Sites designated for nature conservation importance. The programme will assess air quality effects from local roads in the vicinity of proposed allocations on nearby European Sites (including those from increased traffic, construction of new roads and up[grading of existing roads), as recommended in work carried out on Habitats Regulations Assessment. The impacts on vulnerable locations from air quality effects of increased traffic on the wider road network will also be tested using traffic projections

and distance criterion. This will be followed by local air quality modelling where required at the pre-allocations testing stage and the development of any mitigation measures required to ensure that there are no adverse effects on the European Sites.

5.4.184 The Strategy identifies planning and development control measures that are capable of mitigating and improving vehicle emissions and exposure to emissions, enabling residents to make green vehicle choices. The development control measures, which are in the process of being implemented, introduce air quality mitigation as part of a good scheme design, addressing the issue of cumulative impact and provide clarity and consistency for evaluation of proposals. This approach places more emphasis on incorporating road transport emission mitigation as standard, thereby defining what sustainability means in air quality terms.

Water Environment

5.4.185 The policy relating to water quality expresses the Council's commitment to working with partners to achieve the aims of the water framework directive. It recognises the potential impact that accommodating growth within the district and specific proposals for development could have on water resources and water quality.