



12. THE CHALLENGE OF CLIMATE CHANGE

Climate Change Objectives

- To ensure that there is a consistent thread of policies and actions throughout the Neighbourhood Plan that will help respond to the Climate and Ecology Emergency
- To initiate a Parish Council strategy to meet the Climate and Ecology Emergency through supporting measures to encourage energy efficiency and green energy generation.

National and Local Background

12.1 The Climate Change Act 2008 sets out the UK's response to the Challenge of Climate Change. Including an amendment in 2019, it commits the UK to net zero carbon emissions by 2050. Government guidance sees the planning system as an important part of the UK's response to climate change. The National Policy Planning Framework says:

'The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.' (para. 157)

12.2 As well as helping to 'increase the use and supply of renewable and low carbon energy and heat' through Local Plans (para. 160), local planning authorities:

'should support community-led initiatives for renewable and low carbon energy, including developments outside areas identified in local plans or other strategic policies that are being taken forward through neighbourhood planning' (para 161).

12.3 Planning Guidance on Climate change also refers to: '..... the expectation that neighbourhood plans will contribute to the achievement of sustainable development.'

12.4 The Broomfield Neighbourhood Plan has therefore been prepared in a way that meets this expectation. In doing so, it also takes account of:

- the Chelmsford Local Plan, particularly Strategic Policy S2 - Addressing Climate Change and Flood Risk
- Chelmsford City Council declaring a Climate and Ecology Emergency on 16th July 2019 and its Climate and Ecological Emergency Action Plan (January 2020)
- the views of local residents, as indicated by the residents' questionnaire in 2017. This indicated the overwhelming importance of the natural environment for the local community, including the importance of wildlife. It also revealed deep concern about the level of traffic and a willingness to consider alternative green transport modes if the infrastructure is provided.

Fuel Poverty

12.5 In the 2011 Census, 9.8% of households in Broomfield were recorded as living in fuel poverty, not far short of the average for England of 10.9%. 22 (1.2%) of households had no central heating.

Links with other sections of the Neighbourhood Plan

12.6 This section has been guided by 'Neighbourhood Planning in a Climate Emergency', a guidance document published by the Centre for Sustainable Energy in February 2020, with the endorsement of the Town & Country Planning Association. This document emphasises that sustainability should not be confined to one section of a neighbourhood plan but should rather be embedded in the overall vision and should be reflected in a range of policies throughout the plan.

12.7 So, it's important to stress the links with the policies and community actions in other sections of this Neighbourhood Plan. A number of these contribute to the Plan's overall response to the challenge of climate change and to promoting biodiversity and sustainability, as follows:

Section and Policy/Community Action	Link to Sustainability etc
Section 5: Landscape Setting	
Policy BFD1 - Preventing Coalescence	Maintains a Settlement Buffer between Broomfield and Chelmsford, which will help to maintain a wildlife corridor
Policy BFD2 - Protecting Broomfield's Landscape Character	Requires any development in the Rural Area to protect its distinctive features, which are likely to include trees, hedgerows etc
Community Action CA2 - Conserving and Enhancing the Landscape	Enabling conservation and enhancement of landscape features (including biodiversity)
Section 6: The Natural Environment	
Policy BFD3 - Recreational Disturbance Avoidance and Mitigation	Mitigation strategy to protect the birds of the Essex coast and their habitats from increased visitor pressure associated with new residential development.
Policy BFD4 – Trees, Woodland and Hedgerows	These policies/actions aim to protect or enhance habitats in order to protect/enhance biodiversity.
Community Action CA3 – Creation and Maintenance of Woodland and Hedgerows	
Community Action CA4 - Further Study of the Natural Environment	Aims to increase the data on sensitive local landscapes and biodiversity assets, to better inform future planning strategies and to highlight where positive action can be taken to enhance biodiversity.
Policy BFD5 - Protecting the Highest-Grade Agricultural Land	Aims to protect Grade 2 (high-grade) farmland, reducing the need to import food through less sustainable food sourcing.
Community Action CA5 - Extension to the Local Nature Reserve	Aims to increase biodiversity.
Policy BFD6 – Broomfield Green Wedge	Improve walking and cycling paths to encourage sustainable journeys
Community Action CA6 - Improving Public Access to the Chelmer River Valley	
Policy BFD7 - Local Green Spaces	Aim to protect green spaces, including habitats, from inappropriate development and ensure the maintenance of a network of green spaces within/adjoining the built area, to support both humans and wildlife.
Community Action CA7 - Conserving and Enhancing the Special Features of Local Green Spaces	

Section and Policy/Community Action	Link to Sustainability etc
Section 7: Housing	
Policy BFD9 - Adaptable Homes	Aims to support home working through the provision of home office space and broadband connection, reducing the need to commute.
Section 8: Development Design	
Policy BFD12 - Sustainable Construction Practices	Encourages current best practice in energy conservation and the use of green energy sources.
Section 10: Community Facilities	
Community Action CA12 - Meeting the Need for New Community Facilities	Aims to minimise the need to travel, by creating new local facilities, including support for working from home.
Community Action CA13 - Open Green Space south and west of Broomfield Place.	Aims to use the opportunity of new open space to, amongst other things, enhance biodiversity.
Section 11: Traffic and Travel	
Community Action CA14 - Strategy to Encourage Sustainable Travel Community Action CA15 - Reducing the Impact of Traffic	These aim to promote sustainable transport by making it easier/safer to walk, cycle or use public transport; and to reduce the impact of high-volume vehicle use on the community.

Flooding and Flood Risk

- 12.8 The natural environment in the Parish plays an important role in managing flooding and flood risk - issues that have become more severe due to climate change. Its role includes:
- absorbing surface water run-off from built-up areas;
 - providing a network of ditches and streams which, if properly managed and maintained, can help to reduce the risk of flooding; and
 - providing flood storage capacity, for instance within the Green Wedge; and on a smaller scale the network of ponds which is extensive in the countryside around Broomfield.
- 12.9 Paragraph 5.7 of the adopted Local Plan lists the range of flood risks across the City area. Of these, the greatest risks in Broomfield are:
- river flooding (from the Chelmer);
 - directly from rainfall on the ground surface and rising groundwater; and
 - overwhelmed sewers and drainage systems.



Risk of River Flooding

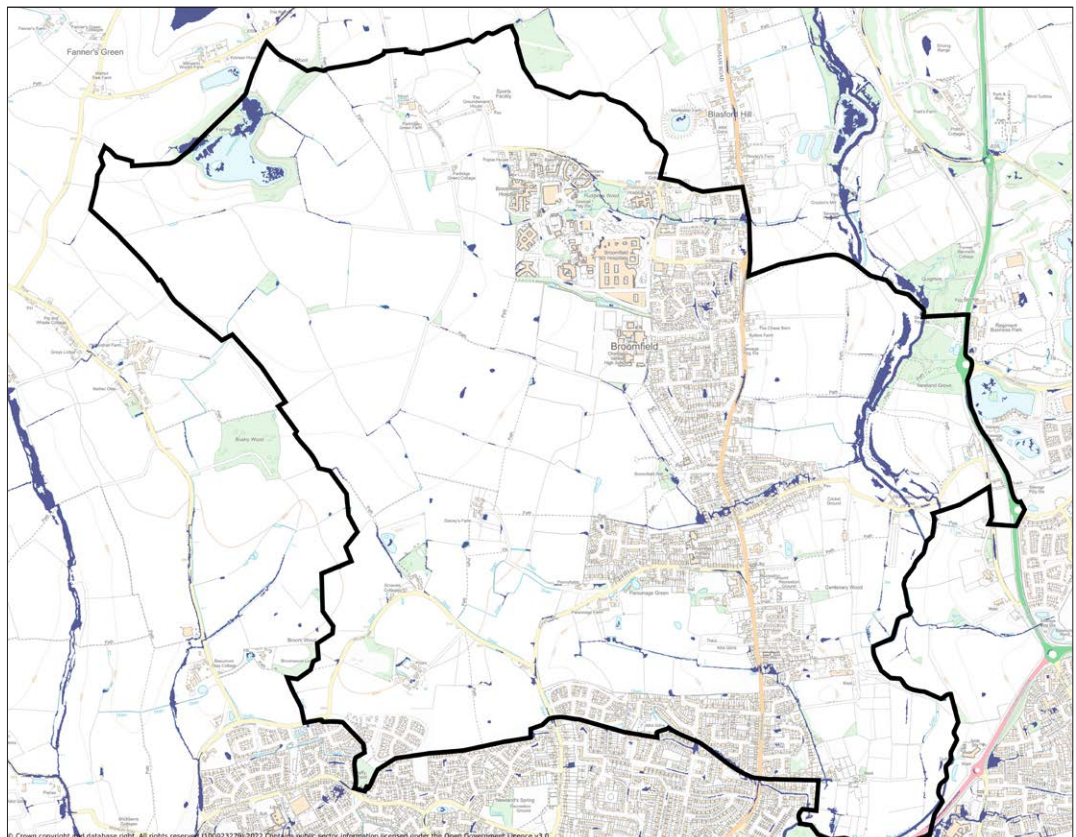
- 12.10 In Broomfield, all land at risk from river flooding falls within the Chelmer Valley Green Wedge (along with other land not at risk). The NPPF requires that a site-specific flood risk assessment is provided for all proposals in Flood Zones 2 and 3 and the NPPF sequential test should be applied that steers new development to areas with the lowest risk of flooding.



Map 13 - Map indicating the potential threat from river flooding
Source: Environment Agency

Zone 2 (turquoise): Land considered to have a 1 in 1,000 (0.1%) chance of flooding each year.

Zone 3 (blue): Land considered to have a 1 in 100 (1%) chance of flooding each year.



Map 14 - Map showing areas at high risk (1 in 30 chance) of surface water flooding Source: Environment Agency

Surface Water Flooding

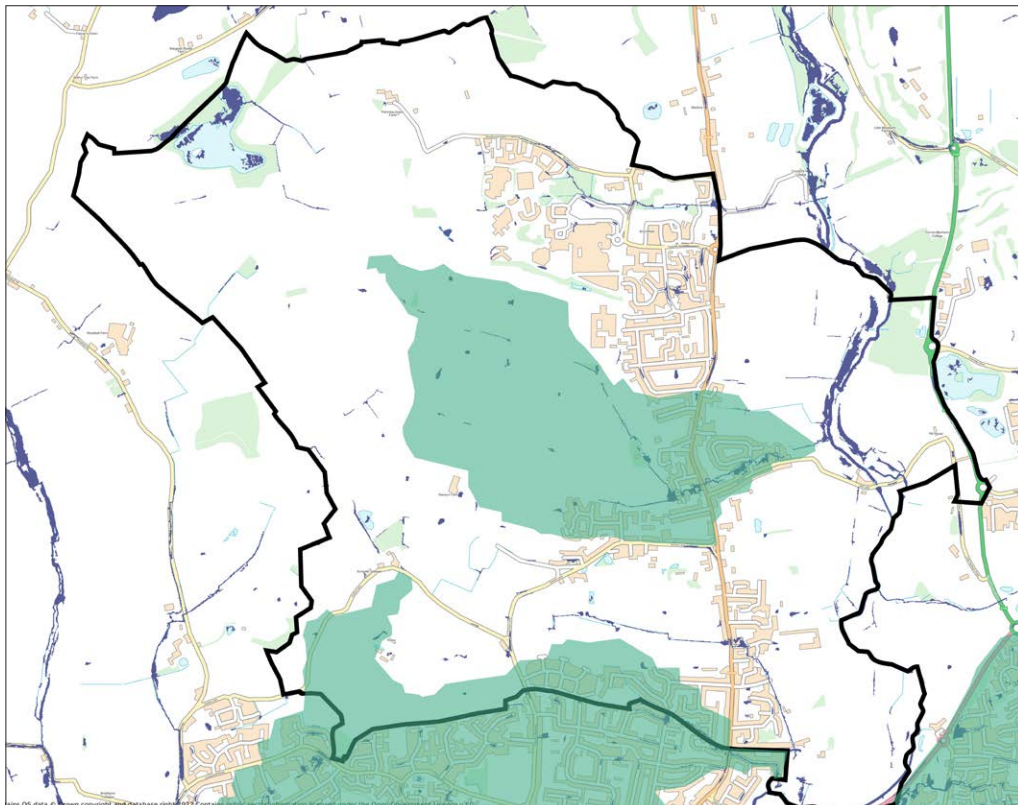
12.11 The Local Flood Authority is Essex County Council. Areas in Broomfield at risk of surface water flooding are identified on the County Council's website at: <https://flood.essex.gov.uk/mapped-flood-information/> and illustrated on the map in Map 15.

12.12 Significant amounts of Broomfield Parish fall within what is termed locally as 'Critical Drainage Areas', which are areas where multiple and interlinked sources of flood risk (surface water, groundwater, sewer and river) cause flooding in one or more Local Flood Risk Zones during severe weather, thereby affecting people, property or local infrastructure. In Broomfield, the Critical Drainage Areas have been identified broadly as:

1. along the southern parish boundary; and
2. the area between School Lane and Broomfield Hospital, stretching eastwards to include Mill Lane and Glebe Crescent.

These are shown on the map in Map 15.

12.13 The continued management of flood risk, especially from surface water flooding, remains a priority in the Neighbourhood Area. The Local Plan provides an up-to-date policy approach for the management of flood risk across the City Council area, but further reinforcement of the Local Plan approach is needed to manage the risks in the Broomfield Critical Drainage Areas. Proposals in these areas will be required to demonstrate how they will not increase and, where possible, improve surface water run-off rates.



Map 15 – Map showing Critical Drainage Areas in Broomfield (shaded green) Source: Essex County Council

POLICY BFD16 - FLOOD RISK MITIGATION

In addition to the requirements of the Chelmsford Local Plan (2020), proposals for development in or which are likely to have an impact on the Critical Drainage Areas as identified on Map 15 should, where appropriate and through the use of Sustainable Urban Drainage Systems and/ or storm water harvesting and recycling, result in a surface water run-off rate equal or better than the 1 year greenfield surface water run-off rate for that Area. The design of Sustainable Urban Drainage Systems should have regard to the standards set out in the Essex SUDS Design Guide.

Supporting the Generation and Use of Renewable Energy

- 12.14 As indicated above, the NPPF requires the planning system to 'support renewable and low carbon energy and associated infrastructure'.
- 12.15 Broomfield has some capacity to support the generation of renewable energy, although not all forms would be appropriate bearing in mind the Evidence Base and the wider planning context:
- **Large-scale solar farms.**
Chelmsford City Council has recently published Supplementary Planning Guidance about the best location for solar farms. This proposes that high-grade farmland is inappropriate for large-scale solar farms. Broomfield consists of high-quality Grade 2 and 3 agricultural land, so only Grade 3b land should be considered. Even that would be subject to other criteria in the Guidance.
 - **Wind turbines.**
As with large-scale solar farms, wind turbines can have a high impact on landscape quality, so would be inappropriate in sensitive landscape areas. Small-scale development in specific locations may be acceptable – like the installation at the Chelmer Valley Park and Ride.

Small-scale wind generation with the purlieu of a complex of large buildings (such as the Hospital) might be appropriate.

- **Wood chip**
Broomfield does not have a lot of woodland, so it would be difficult to use this particular form of biomass energy sustainably.

12.16 On the other hand, Broomfield does have the potential for other forms of green energy:

- Building-mounted solar panels
- Air and ground source heating.
In particular, there may be potential to create ground source heating systems where homes are located around a green or open space
- **Micro hydroelectricity.**
Broomfield has had a watermill from at least 1086 (recorded in the Domesday Book) and well into modern times, with the last one closing in the 1920s. Some of the infrastructure of the mill remains. Although the technology for creating hydroelectricity is different, it suggests there is potential at least for a micro electricity scheme on the River Chelmer.

Towards a Parish Strategy to Increase the Use of Green Energy

12.17 Developing a Parish Strategy will depend on obtaining sufficient expertise, either through a working group of interested residents and councillors or through a professional consultant. A strategy will require more research than has been undertaken to date; and it would need to evolve – for instance, as the climate and biodiversity crisis evolves; and as government support and funding develops.

12.18 Currently, the following could be opportunities for the Parish Council and local community to make a significant contribution to increasing the use of green energy in Broomfield:

- **Supporting the introduction of charging points for electric vehicles**
The achievement of the Government's targets depends not only on the cost and availability of electric vehicles but also on the infrastructure

of charging points. Parish councils can participate in a grant-funded scheme to instal on-street charging points where dwellings do not have off-street parking. The scheme also covers parish-owned car parks.

- **Supporting the expansion of roof-mounted solar panels**
The County and City Councils participate in a scheme called Solar Together, which aims to achieve better prices by grouping customers together and by vetting suppliers/providing expertise. The Parish Council could work with them to give the scheme greater publicity and possibly, on a targeted basis, to subsidise the cost for Broomfield residents.
- **Retaining a professional service to support/ make it easier for residents to switch to greener and cheaper energy providers, and take advantage of grants for home insulation**
Schemes already exist, such as Essex Energy Switch, Solar Together Essex and the Energy Saving Trust. However, many residents may be reluctant to use them because of a perceived fear of complexity, paperwork etc. A free professional service that can offer independent advice and complete paperwork on behalf of residents might increase uptake in Broomfield and, in particular, provide support for households living in fuel poverty.
- **Exploring the opportunity for ground-sourced heating systems and district heating networks**
In new developments, this would involve working with developers to encourage consideration. Within the existing built-up area, it could involve a feasibility study and, where feasible, liaising with residents and professional installers.
- **Exploring the feasibility of a micro hydroelectricity scheme on the River Chelmer**
Where the Strategy involves energy generation, it would be good for this to be community-owned and led, so that any profits can be ploughed back into the local community- perhaps aimed particularly at sustainability and

biodiversity projects. The extent to which this is possible may depend on the level of expertise required from outside companies and agencies.

Community Action CA16 – Strategy to Encourage the Generation and Use of Renewable Energy

Subject to engaging sufficient expertise, the Parish Council will develop and implement a strategy to encourage the generation and use renewable energy; and to reduce fuel poverty.

POLICY BFD17 – MICRO HYDROELECTRICITY SCHEMES

Proposals for micro hydroelectric schemes will be supported subject to the following criteria:

- i. the siting and scale of the proposed development is appropriate to its setting and position in the wider landscape, including to a Special Character Area if relevant; and
- ii. the proposed development does not create an unacceptable impact on the amenities of local residents; and
- iii. the proposed development does not have an unacceptable impact on a feature of natural or biodiversity importance

Micro hydroelectricity is defined by the British Hydropower Association:
“Mini hydro power systems convert the potential energy in small streams and waterways into kinetic energy via a mechanical turbine, which drives a generator to produce electricity.”